

# LBT-V925CD

## SERVICE MANUAL

*AEP Model*  
*UK Model*

- LBT-V925CD is composed of following models.  
As for the service manual, it is issued for each component model, then, please refer to it.

### COMPONENT MODEL NAME FOR LBT-V925CD

MODEL	AEP, Italian	UK
PRE AMPLIFIER	TA-V925EE	TA-V925EE
POWER AMPLIFIER	TA-V925NE	TA-V925NE
CASSETTE DECK	TC-V925E	TC-V925E
TUNER	ST-V925E	ST-V925E
CD PLAYER	CDP-V925E	CDP-V925E
TURNTABLE SYSTEM	—	PS-V901

### SPECIFICATIONS

#### General

Power requirements 220 V AC, 50/60 Hz (AEP, Italian model)  
240 V AC, 50Hz (UK model)

#### Accessories supplied

Remote commander (1)  
Batteries Sony SUM-3 (NS) (2)  
AM loop antenna (1)  
FM wire antenna (1)  
Connecting cord (short) (1)  
Connecting cord (long) (3)  
Flat cord (1)

### PARTS LIST

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

### ACCESSORY & PACKING MATERIAL

Part No.	Description
1-465-228-11	REMOTE COMMANDER(RM-S925E)
1-501-369-11	ANTENNA
1-501-374-11	ANTENNA, LOOP
1-558-543-11	CORD, CONNECTION
1-574-264-11	CORD, LIGHT PLUG
1-574-314-11	CORD WITH CONNECTOR(3P-3P-3P)
3-350-115-00	CUSHION(for TC)
3-701-806-00	(UK)... ADAPTOR, 45, (E)
3-750-420-11	(UK)... MANUAL, INSTRUCTION(PS-V901)
3-786-912-11	(AEP)..... MANUAL, INSTRUCTION
3-786-912-41	(AEP, Italian)... MANUAL, INSTRUCTION
3-786-912-51	(UK)..... MANUAL, INSTRUCTION
* 4-913-575-01	(UK)... CUSHION(L)(for PS)
* 4-913-576-01	(UK)... CUSHION(R)(for PS)
4-914-075-01	CUSHION(SP)
* 4-920-940-01	SHEET(A), PROTECTION(for CD)
* 4-922-998-01	CUSHION(for CD)
* 4-928-226-01	SHEET(T.T)(for PS)
* 4-928-406-01	CUSHION(for ST)
* 4-928-469-01	CUSHION(for TA)
* 4-930-849-01	(AEP, Italian)... INDIVIDUAL CARTON
* 4-930-850-01	(UK)..... INDIVIDUAL CARTON



9-953-976-11

Sony Corporation  
Audio Group

COMPACT STEREO SYSTEM  
**SONY**®

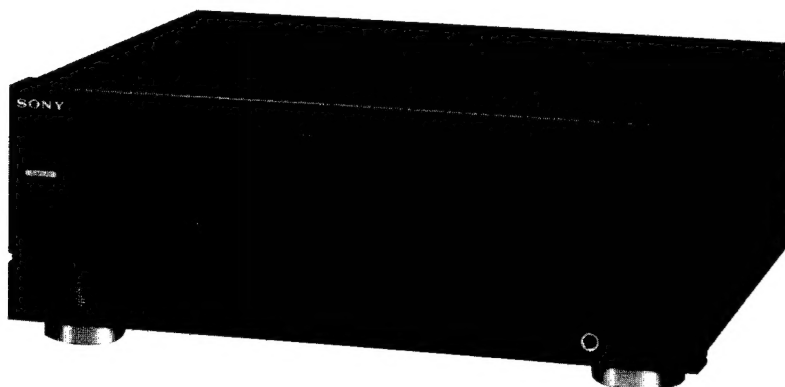
English  
89H0447-1  
Printed in Japan  
©1989. 8

Published by A/V Engineering Service Dept.

# TA-V925EE

## SERVICE MANUAL

AEP Model  
UK Model



This set is the pre-amplifier section in LBT-V925CD.

### SPECIFICATIONS

#### Inputs

	Jack type	Sensitivity	Impedance
PHONO IN	Phono	2.8 mV	50k ohms
TUNER, TAPE, VIDEO 1, VIDEO 2/DAT, VIDEO 3/CD, TAPE IN	Phono	200 mV	50k ohms
MIC	Phone	1 mV	10k ohms

#### Outputs

	Jack type	Voltage	Impedance
TAPE, DAT, VIDEO 1, VIDEO 2/DAT, LINE/MONITOR	Phono	200 mV	470 ohms

Power consumption 20 W

Dimensions 355 × 132 × 320 mm (w/h/d)  
(14 × 5<sup>1</sup>/<sub>8</sub> × 12<sup>3</sup>/<sub>8</sub> inches)

Weight Approx. 4.7 kg (10 lb 6 oz)

#### Digital parametric equalizer for sound control

This function employs digital processing to enable you to adjust the quality of the sound by raising and lowering the levels of specific frequency ranges.

#### Digital presence surround which allows you to select the surround system to match the music genre

This function features three types of surround – music, movie, and simulated – to allow you to match the surround system with the genre of the sound source and reproduce the sound as if you were actually experiencing it in a concert hall or movie theater. In addition, the amount of reverberation can be varied in order to reproduce sound with a sense of presence as if it were being listened to in a concert hall.

#### Digital dynamic sound for providing low-volume sound with a feeling of power

When listening at low volume levels, this function raises the level of hard to hear sounds and provides the sound with a good overall balance.

#### Abundant input and output jacks for handling digital transmission and a wide variety of AV equipment

This preamplifier is provided with optical inputs for connecting up to 2 digital components such as CD players and DAT decks, and video inputs for connecting up to 3 video components such as VTRs and video disc players.

## Features

#### Digital drive preamplifier for creating vibrant sound

The preamplifier features a Digital Parametric Equalizer, Digital Presence Surround, and Digital Dynamic Sound. Enabling you to mold the musical sound to your individual taste. Also, you can easily adjust the music to your taste by selecting from various patterns (up to 200) which combine these three functions and are stored in the preamplifier's preset memory.



DIGITAL DRIVE  
PREAMPLIFIER  
**SONY**®

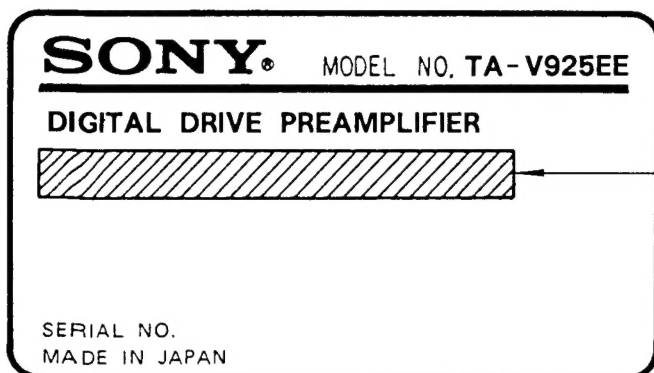


## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
Specifications .....		1
Model Identification .....		2
<b>1. GENERAL</b>		
Parts Identification .....		3
<b>2. DISASSEMBLY</b> .....		8
<b>3. DIAGRAMS</b>		
3-1. IC Function Description .....		9
3-2. Frame Harness .....		15
3-3. Block Diagram .....		17
3-4. Printed Wiring Board (Analog Section) .....		21
3-5. Schematic Diagram (Analog Section) .....		25
3-6. Schematic Diagram (Digital Section) .....		29
3-7. Printed Wiring Board (Digital Section) .....		33
3-8. Printed Wiring Board (Display Section) .....		36
3-9. Schematic Diagram (Display Section) .....		39
<b>4. EXPLODED VIEWS</b> .....		43
<b>5. ELECTRICAL PARTS LIST</b> .....		45

### MODEL IDENTIFICATION



— Specification Label —



AEP Model : AC : 220 V ~ 50/60 Hz

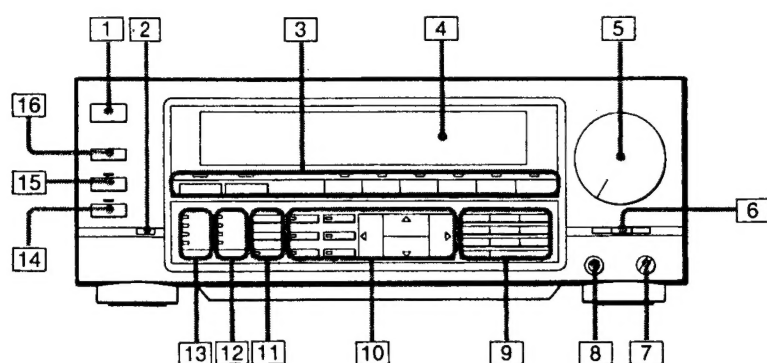
UK Model : AC : 240 V ~ 50/60 Hz

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1 GENERAL

### Parts Identification



- 1** POWER switch
- 2** CLEAR button
- 3** Function buttons and indicators
- 4** Display window
- 5** VOLUME control
- 6** BALANCE control
- 7** MIC (microphone) LEVEL control
- 8** MIC (microphone) input jack
- 9** USER MEMORY buttons
- 10** Digital CONTROL MODE buttons
- 11** Digital Parametric EQUALIZER curve operation buttons
- 12** DIGITAL DYNAMIC SOUND selector and indicators
- 13** DIGITAL PRESENCE SURROUND selector and indicators
- 14** DIGITAL EFFECT switch and indicator
- 15** EQUALIZER RECORDING switch and indicator
- 16** DISPLAY button

### Using the Preamplifier's Sound Manipulation Features

The preamplifier is equipped with three sound manipulation functions – an equalizer function, a surround function, and a dynamic sound function – for improving the sound in your listening environment.

The equalizer can be used to raise and lower the levels of specific frequency ranges. The surround function can be matched to the music genre or source to effectively reproduce a feeling of “being there”. The dynamic sound function can be used to give a powerful feeling to music when listening at low volume levels.

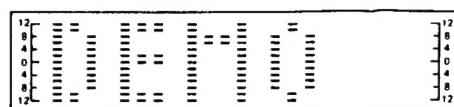
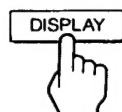
Making full use of these three functions allows you to create a variety of different sounds and effects and to maximize your music listening enjoyment.

- DP EQ (Digital Parametric Equalizer) – Level adjustment of specific frequency ranges
- RUN – Equalizer curve movement
- CROSS – Equalizer curve synthesis
- SLOPE – Equalizer curve slope selection
- DPS – Digital Presence Surround
- DDS – Digital Dynamic Sound
- DISP (Display) – Spectrum analyzer/Peak value display
- DATA CALL – Preset memory
- USER CALL – User memory

- 1 Play a compact disc or other program source.**
- 2 Press the DISPLAY button a number of times until the DEMO indication appears on the display.**  
After “DIGITAL” is displayed, demo mode begins.

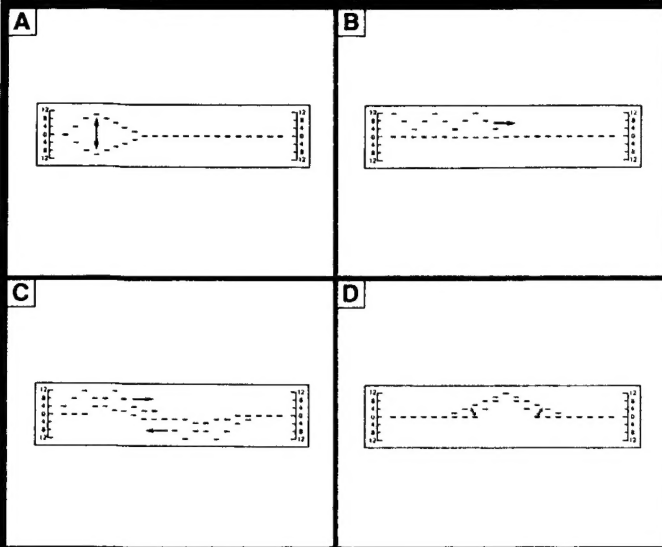
#### Demo Mode

This system is provided with a demo mode to allow you to get a taste of the rich variety of effects possible with the preamplifier functions. Before using the preamplifier to make adjustments to the sound, use the demo mode to experience the various effects while watching the changes on the display and listening to the differences in the quality of the sound produced by each effect. This mode demonstrates the effect of each of the following functions.



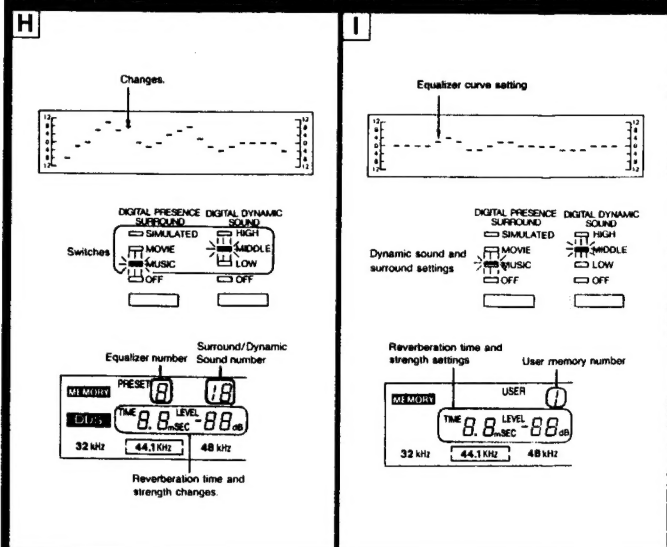
## Using the Preamp's Sound Manipulation Features

## Demo Mode Contents



## Using the Preamp's Sound Manipulation Features

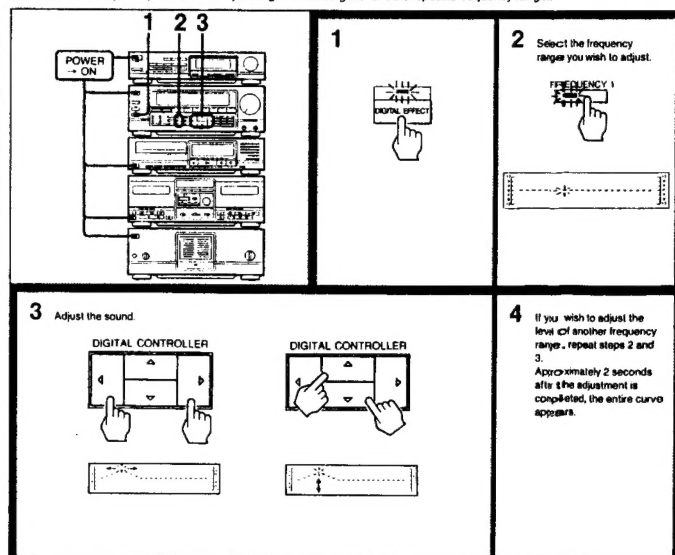
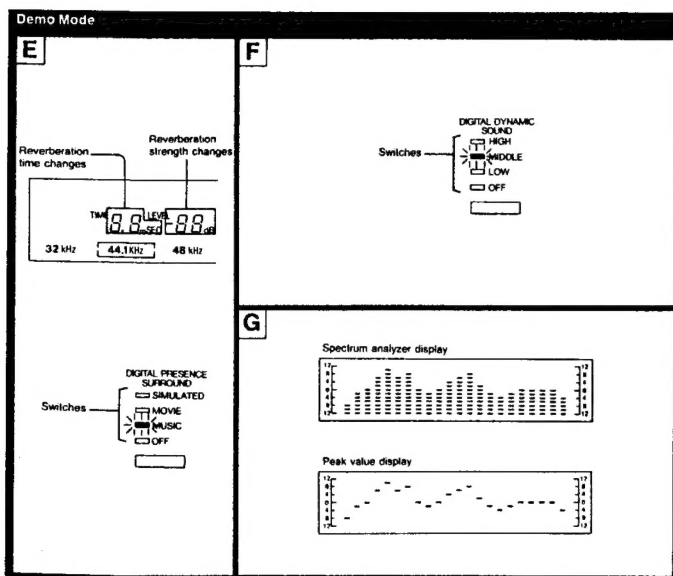
## Demo Mode



**Stopping Demo Mode and Making Sound Quality Adjustments**  
Press the equalizer, dynamic sound, or surround button you wish to adjust. Demo mode is automatically canceled.

## Adjusting the Sound Using the Digital Parametric Equalizer

This feature allows you adjust the sound by raising and lowering the levels of specific frequency ranges.



**[E] DPS (Digital Presence Surround)**  
(MUSIC, MOVIE, SIMULATED)  
You can select the surround effect to fit the genre of the music, and you can also set the reverberation time and strength. These functions allow you to create a sound that has a feeling of "being there". This shows the difference between the three types of Digital Presence Surround (MUSIC, MOVIE, and SIMULATED).

**[F] DDS (Digital Dynamic Sound)**  
(LOW, MIDDLE, HIGH)  
When listening at low volume levels, the Digital Dynamic Sound function boosts hard to hear sounds to improve the overall balance of the sound. This shows the difference between the three types of Digital Dynamic Sound (LOW, MIDDLE, and HIGH).

**[G] DISP (Display)**  
This shows how the display can be switched between the spectrum analyzer display and the peak value display.

## At step 2:

Button	Frequency range
FREQUENCY 1	Low range
FREQUENCY 2	Middle range
FREQUENCY 3	High range

When the unit is shipped from the factory, or after the CLEAR button has been pressed to erase the adjustment settings (see page 62), each of the three frequency buttons is defined for a specific frequency range as shown in the above table, so decide what your goal is before proceeding. The adjustable frequency range can be freely moved left and right (low → high) along the frequency scale as explained in the next step. This allows each of the frequency buttons (1 – 3) to be used for any frequency range. For example, the FREQUENCY 1 button does not have to be used to adjust a

low-frequency range, but can be used instead to adjust a mid- or high-frequency range by moving it to the right along the scale. Once the FREQUENCY 1 – 3 buttons are set, the frequency range represented by the buttons remains unchanged until the buttons are readjusted.

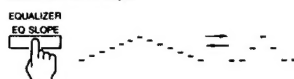
**At step 3:**  
◀ or ▶: Shifts the frequency range to be adjusted to the left or right.  
Δ or ∇: Raises or lowers the level of the frequency range centering around the blinking dot.

**Note:**  
If two "hills" on the equalizer curve are combined and the peak of the resulting "hill" exceeds 12 dB, the dots which represent levels higher than 12 dB blink.

## Adjusting the Sound Using the Digital Parametric Equalizer

## Changing the slope of the adjusted curve

- 1 Check to make sure that one of the FREQUENCY 1-3 buttons is lit.
- 2 Select the curve slope.



Switches between a gentle slope and a sharp slope.

## Confirming the effect of the adjustment



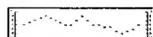
Every time the button is pressed, the sound is switched between the pre-adjustment settings and the adjusted settings, allowing you to hear and compare the difference.

## Changing the display

The display switches every time the button is pressed.



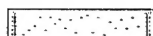
Equalizer curve shows how the sound you hear is adjusted.



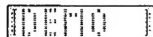
Spectrum analyzer 1 shows the level of the music signal at each frequency band in real time.



Spectrum analyzer 2 shows the maximum level value (peak value) of the music signal at each frequency band in real time.



Demo mode (page 49) indicates the start of demo mode.



## Remaking an equalizer curve



The equalizer curve becomes flat. You can now remake the equalizer curve from the beginning using the FREQUENCY 1-3 buttons and the DIGITAL CONTROLLER.

## Reversing an equalizer curve

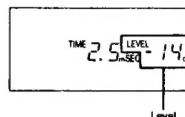
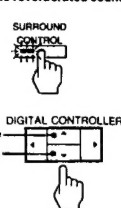
If you reverse the equalizer curve, you can hear sound adjusted with a pattern exactly the reverse of that of the original curve.



Press again and the curve reverts to its original shape. When recording a program source, if you pre-adjust the equalizer curve so as to raise the level of the high frequency sound before recording, and then reverse the curve during playback by pressing the REVERSE button, you can reduce high frequency noise.

## Using the Digital Presence Surround Effects

## To vary the level of the reverberated sound



## To confirm the surround effect

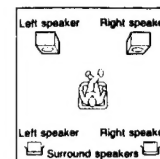


The sound is switched between the pre-adjustment settings and the adjusted settings, allowing you to hear and compare the difference.

When you do not want to apply the surround effect Press so that the OFF indicator lights.

## Typical speaker system layout

The example illustrated below is a typical speaker system layout. Vary the positioning and direction of the surround speakers to suit your listening environment and individual taste.

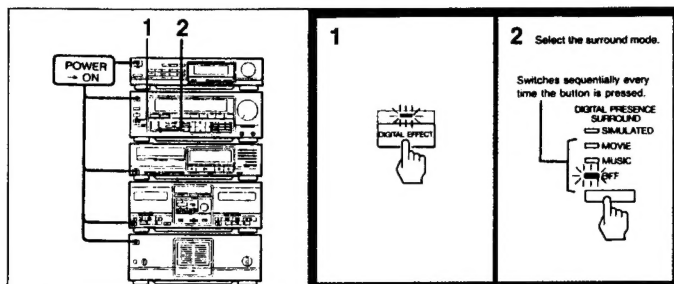


## Note:

Even if the Digital Presence Surround selector is set to the OFF position, sound is output from the surround speakers. By connecting optionally available surround speakers to the surround speaker jacks, the sound field will be expanded to 360 degrees, enabling you to enjoy full-fledged surround sound.

## Using the Digital Presence Surround Effects

By using this system's various surround effects, you can create a feeling of presence similar to being in a concert hall or movie theater.

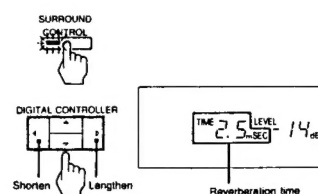


MUSIC	Switches to the music program
MOVIE	Switches to the movie program
SIMULATED	Gives monaural sources a stereo effect

## Readjusting the surround effect

The surround function allows you to adjust the length of the reverberation time and the level of the reverberated sound, putting you in control of a wide range of effects and sounds. The surround effect adjustments should usually be set to match the size of the envisaged concert hall. When you want to create the atmosphere of a small hall such as a live house or club, shorten the reverberation time. When you want to create the atmosphere of a large hall such as a concert hall, lengthen the reverberation time. If you want to add the feeling of being in a "live" hall where there is a lot of echo, increase the level (strength) of the reverberated sound. If you want to add the feeling of being in a "dead" hall where there is little echo, decrease the level of the reverberated sound.

## To vary the reverberation time



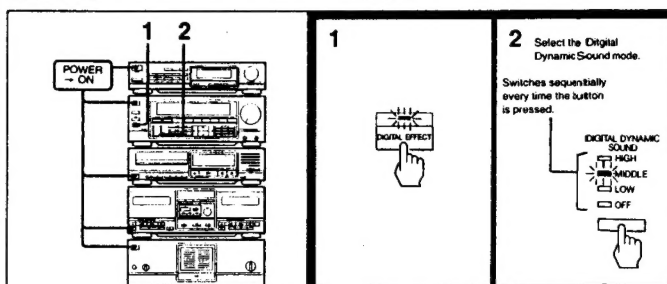
## Providing Low-Volume Sound with a Feeling of Power

## - Digital Dynamic Sound

## Use the Digital Dynamic Sound function.

Although this function can be enjoyed at normal volume levels, it is especially effective for making low volume sound more powerful.

Also, since this function has the effect of making low-volume sound easier to hear over external noise, it is effective for use when recording tapes meant for playing in a Walkman or car stereo.



Position	Strength of the Digital Dynamic Sound effect
HIGH	Strong
MIDDLE	Medium
LOW	Weak
OFF	Not applied

## To confirm the dynamic sound effect



The sound is switched between the pre-adjustment settings and the adjusted settings, allowing you to hear and compare the difference.

When the DIGITAL EFFECT switch is OFF (when the indicator is extinguished), the equalizer, surround, and dynamic sound functions can be operated, but the sound you hear does not change. The DIGITAL EFFECT switch must be ON for the adjusted sound to be heard.

## Digital Sound Menu

See "Using the Digital Sound Menu Settings to Adjust the Sound" for operation.  
To handle different sound types and program sources, 200 different combinations of equalizer, surround and dynamic sound settings can be obtained.

10 specially recommended settings (SELECT 10) are stored in the user memory and indicated on the diagram.  
Use this diagram to name and write down your personal sound settings.

### SELECT 10 user memory

- 1 Large hall: Gives the atmosphere of a large hall which seats more than 2000 people.
- 2 Recital hall: Gives the atmosphere of a hall which seats less than 1000 people.
- 3 Orchestra: For a music such as classical music which is full of reverberation sound.
- 4 Movie surround: For a video program which is recorded with surround.
- 5 Simulated: Gives width to a monaural program source.

- 6 Jazz club: Gives an atmosphere similar to a jazz club in which the sound is heard brightly and heavily.
- 7 Gym: Gives an atmosphere similar to a gym.
- 8 Walkman: For recording a tape to be listened to with a stereo headphones.
- 9 BGM: For enjoyment of sound at low listening levels.
- 10 Disco: Gives a sound similar to a disco which has firm floors and walls.

	Digital Presence Surround			Digital Dynamic Sound	Equalizer curve  Sound field category		0	1	2	3	4	5	6	7	8	9		
	Category	Reverberation Time	Level				Flat	Lower frequency emphasized	Middle-low frequency emphasized	Sharp crisp sound	Conversation range emphasized	Middle range emphasized	Lower-middle range emphasized	Subsonic range cut	Lower frequency cut (Bright sound)	Strong bass		
19	—	—	—	MIDDLE	Dynamic sound	Strong	0.19	1.19	2.19	3.19	4.19	5.19	[8]	6.19	7.19	8.19	9.19	
18	—	—	—	LOW		Week	0.18	1.18	2.18	3.18	4.18	5.18	6.18	7.18	8.18	9.18		
17	MUSIC	2.4s	−4dB	HIGH	Late night listening		0.17	1.17	2.17	3.17	4.17	5.17	6.17	7.17	8.17	9.17		
16	MUSIC	2.4s	−3dB	LOW	Gym		0.16	1.16	[7]	2.16	[8]	3.16	4.16	5.16	6.16	7.16	8.16	9.16
15	MUSIC	2.4s	−6dB	MIDDLE	BGM		0.15	1.15	2.15	3.15	4.15	5.15	6.15	7.15	8.15	9.15		
14	MUSIC	1.8s	−10dB	MIDDLE	Tape recording	Rock	0.14	1.14	2.14	3.14	4.14	5.14	6.14	7.14	8.14	9.14		
13	MUSIC	1.8s	−20dB	MIDDLE		Pops	0.13	1.13	2.13	3.13	4.13	5.13	6.13	7.13	8.13	9.13		
12	MUSIC	0.4s	−2dB	MIDDLE	Disco		0.12	1.12	2.12	3.12	4.12	5.12	6.12	7.12	8.12	9.12		
11	SIMULATED	30ms	−10dB	LOW	TV drama		0.11	1.11	2.11	3.11	4.11	5.11	6.11	7.11	8.11	9.11		
10	SIMULATED	25ms	−8dB	—	TV movie surround		0.10	1.10	2.10	3.10	4.10	[5]	5.10	6.10	7.10	8.10	9.10	
9	MOVIE	60ms	−8dB	—	Orchestra		0.9	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9	9.9		
8	MOVIE	45ms	−14dB	—	Chamber music		0.8	1.8	2.8	3.8	4.8	5.8	6.8	7.8	8.8	9.8		
7	MOVIE	40ms	−12dB	—			0.7	1.7	2.7	3.7	4.7	5.7	6.7	7.7	8.7	9.7		
6	MOVIE	25ms	−4dB	—	Movie surround		0.6	1.6	2.6	3.6	[6]	4.6	[4]	5.6	6.6	7.6	8.6	9.6
5	MOVIE	5ms	−10dB	—	Expansive presence		0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5		
4	MUSIC	3.2s	−10dB	—	Large hall		0.4	1.4	2.4	[1]	3.4	4.4	5.4	6.4	7.4	8.4	9.4	
3	MUSIC	1.8s	−5dB	—	Recital Hall		0.3	[2]	1.3	2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
2	MUSIC	1.8s	−10dB	—	Large room		0.2	1.2	2.2	3.2	4.2	5.2	6.2	7.2	8.2	9.2		
1	MUSIC	0.4s	−4dB	—	Small room		0.1	1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1		
0	OFF	—	—	—	—		0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0		

## Using the Digital Sound Menu Settings to Adjust the Sound

This unit has a memory containing 10 different preset equalizer settings (0 - 9) and 20 different preset surround and dynamic sound settings (0 - 19) (Digital Sound Menu) for handling different sound types and program sources. This function enables you to choose from 200 (10 × 20) different

equalizer and surround/dynamic sound combinations to set the sound quality to suit your taste and listening conditions. Adjust the sound to fit your taste. See "Digital Sound Menu" on the previous two pages for the contents of the Digital Sound Menu.

## Storing Your Individual Sound Effect Settings - User Memory

By storing your individual sound effect settings or the digital sound menu settings in the user memory, you can easily call up the settings at any desired time. You can store up to 10 combinations of settings in the user memory.

When the system is shipped from the factory, 10 specially recommended settings (SELECT 10) from the digital sound menu are stored in the user memory.

### Calling Up the Sound Menu Settings

**1** Press the **PRESET CALL** button.

The **Surround/Dynamic Sound Number** and **Equalizer Number** are displayed on the **DIGITAL CONTROLLER**.

**2** Call up the equalizer number (0 - 9).

Press the **Equalizer Number** button on the **DIGITAL CONTROLLER**.

**3** Call up the surround/dynamic sound number (0 - 19).

Press the **Surround/Dynamic Sound Number** button on the **DIGITAL CONTROLLER**.

**1** Obtain the desired sound effect. (See pages 53 - 57 or 60.)

**2** Press the **MEMORY** button.

**3** While the **MEMORY** indicator is blinking, press the **USER MEMORY** button.

**At step 2:**  
The displayed equalizer curve, surround, and dynamic sound settings are stored in the user memory under the pressed button, and the number of the user memory location appears on the display. The settings previously stored at this memory location are erased and replaced by the new settings.

### Calling up settings from user memory

Press the button corresponding to the number you wish to recall.



## Storing Your Individual Sound Effect Settings - User Memory

### Making use of the Digital Sound Menu to generate settings for storing in user memory

- 1 Call up the Digital Sound Menu settings you wish to utilize (page 60).
- 2 Modify the equalizer curve (page 53) and/or the surround/dynamic sound (page 55) to match your taste.
- 3 Store the modified settings in the user memory by following the procedure listed under "Storing Your Individual Sound Effect Settings-User Memory".

The utilized preset memory settings remain stored in preset memory in their original condition.

### Storing Digital Sound Menu settings in user memory

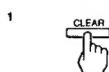
- 1 Call up the Digital Sound Menu you wish to store in user memory. (page 60)
- 2 Store the settings in the user memory.

### How do I restore the contents of the user memory to the initial (SELECT 10) settings?

- 1 Turn on the power.
- 2 Press the CLEAR button before the volume indicator stops blinking.

"M COPY" is displayed and the initial 10 sound menu settings are stored in user memory.

### Erasing adjustments with a single touch of a button



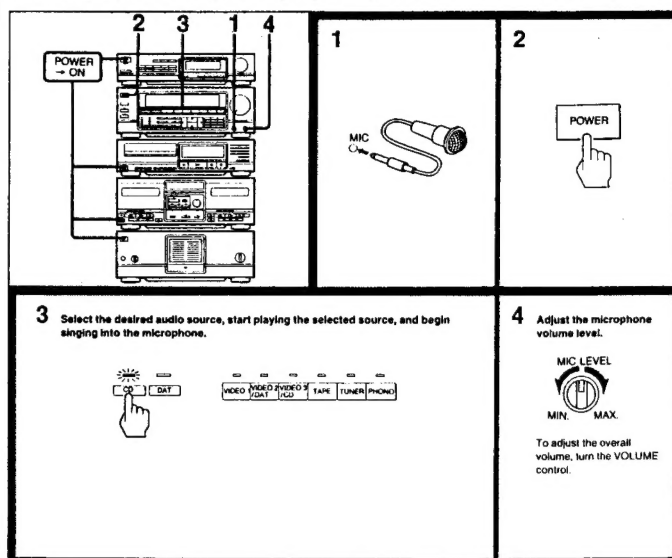
"OK?" appears on the display.

- 2 Press the CLEAR button again and hold it depressed until "CLEAR" is displayed.

All settings, including the FREQUENCY 1 - 3 positions and the surround reverberation time and level, return to their initial (factory) values. However, the settings stored in user memory remain as they were prior to the clear operation.

## Microphone Mixing

This function allows you to use a microphone to sing along or "mix" your voice with a music source such as a compact disc.



### To record the mixed sound

- 1 Load a recording tape into deck B.
- 2 Press the EQUALIZER RECORDING button.\*
- 3 Start recording on deck B (see "Recording" on page 38.)

\* It is not possible to adjust the microphone sound using the Digital Parametric Equalizer, the Digital Dynamic Sound, or the Digital Presence Surround.

### If howling occurs

Turn the MIC LEVEL counterclockwise or separate the microphone away from the speakers.

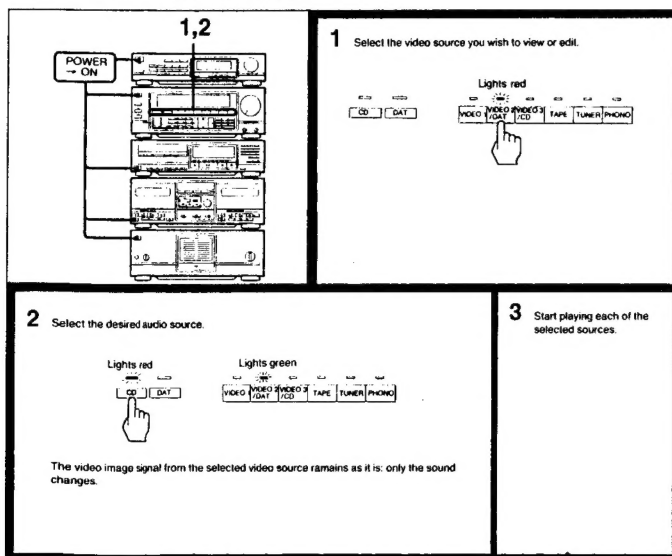
### When the microphone is not being used

Be sure to unplug the microphone from the MIC jack and set the MIC LEVEL control to the MIN position when the microphone is not being used.

## Combining Video Images with Sounds from Other Sources and Performing Video Editing

While viewing a video on a VTR connected to this system, you can listen to music from another source such as a CD player or tape deck. You can also record a video image with the sound from another audio source. For example, this

function enables you to edit a home-made video by recording music you like as the video's background music. The editing possibilities are limited only by your imagination.



### To record the selected video and audio signals

Start recording on the VTR connected to the VIDEO 1 jacks. For details on how to operate connected components, refer to the components' instruction manuals.

### To dub a videotape

- 1 Select the VIDEO 2 or VIDEO 3.
- 2 Start playing the VTR connected to the VIDEO 2/DAT or VIDEO 3/CD jacks.
- 3 Start recording on the VTR connected to the VIDEO 1 jacks.

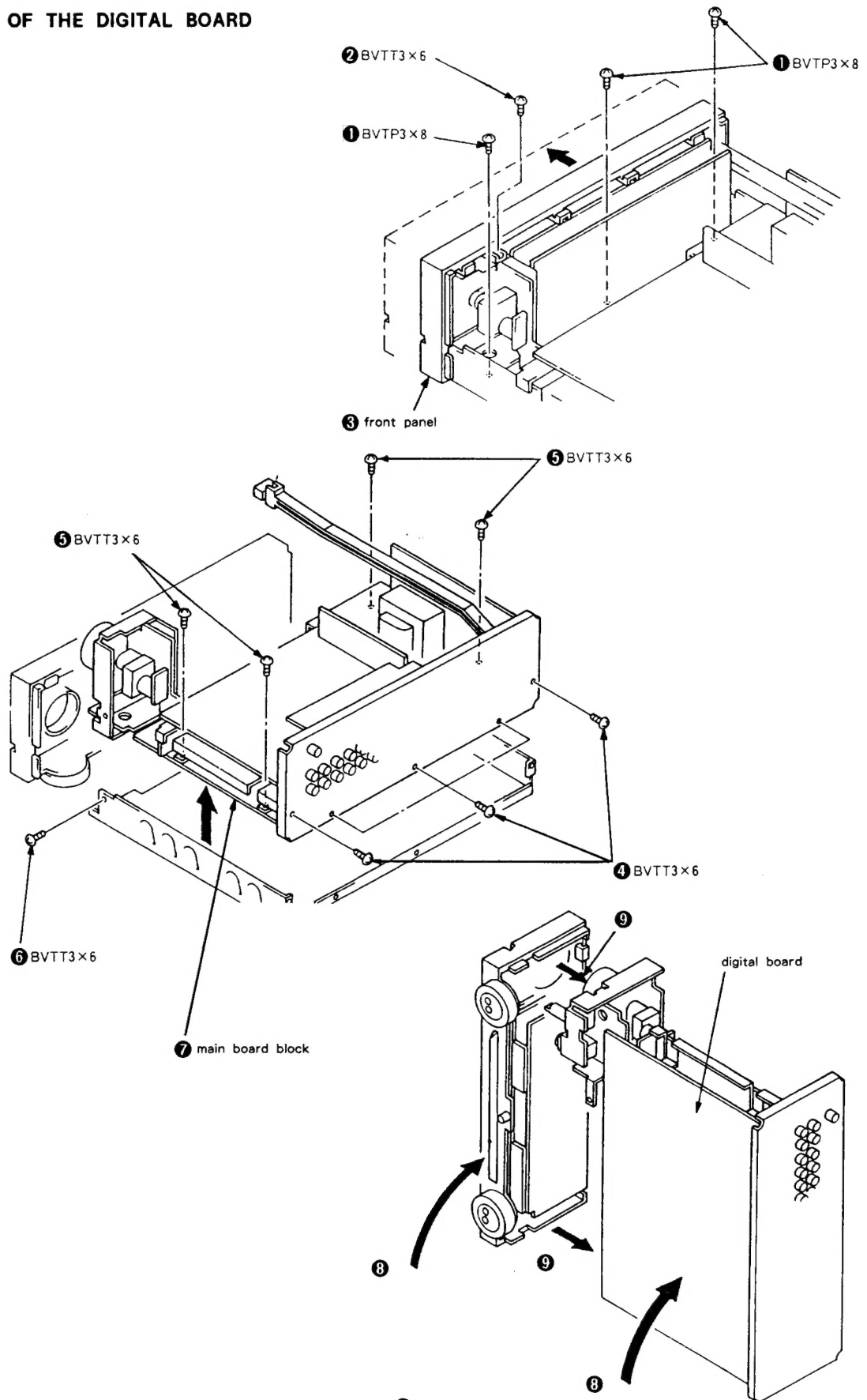
### Note

The only VTR that can be used for recording is the VTR connected to the VIDEO 1 jacks. The VTRs connected to the VIDEO 2/DAT or VIDEO 3/CD jacks cannot be used for recording even if they are operated so as to begin recording.

## SECTION 2 DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

### INSPECTION OF THE DIGITAL BOARD

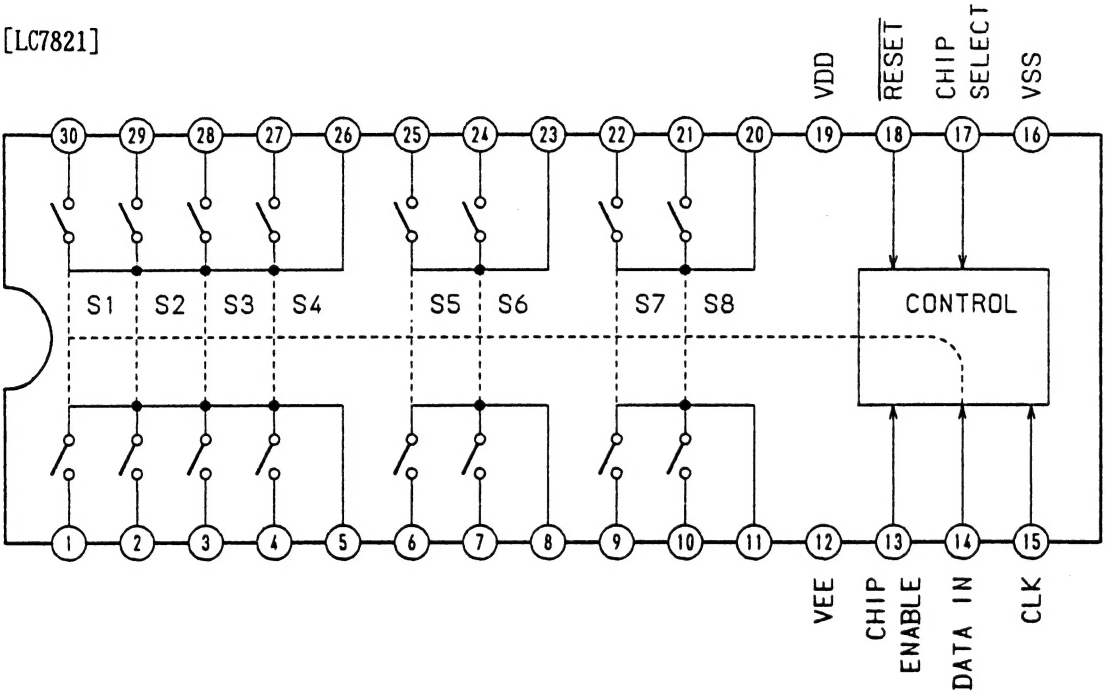


SECTION 3  
DIAGRAMS

3-1. IC FUNCTION DESCRIPTION

© Analog function switches IC103 (LC7821), IC104 (LC7821) and IC201 (M40528BP) are described below. The block diagram and the table below show the open/close status of the switches. All switches are changed using the 12-bit serial data from system microcomputer.

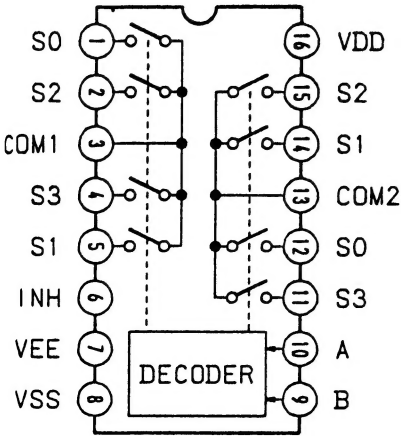
[LC7821]



		PHONO	TUNER	TAPE	VIDEO 1	VIDEO 2	VIDEO 3	CD	DAT	BS
IC104 FUNCTION	S1		ON							
	S2	ON								
	S3			ON						
	S4						ON			
	S5				ON	ON				
	S6									
	S7									
	S8									
IC103 REC OUT	S1	ON	ON		ON	ON	ON	ON	ON	ON
	S2	ON	ON		ON	ON	ON	ON	ON	ON
	S3	ON	ON		ON	ON	ON	ON	ON	ON
	S4	ON	ON		ON	ON	ON	ON	ON	ON
	S5	*	*	ON	*	*	*	*	*	*
	S6	*	*	*	*	*	*	*	*	*
	S7	ON	ON	ON	ON	ON	ON	ON	ON	ON
	S8									

\* S5 of IC103 is on when the EFFECT REC switch is on, S6 is on when it is off.

[M40528BP]



Function		BS	V1	V3	V2
B	A	S0	S1	S2	S3
L	L	ON	ON		
L	H			ON	
H	L				ON
H	H				

© IC301 (CXD1240) for digital signal input

This IC selects the digital audio input signal, transmits the format information for the input signal to the system microcomputer, or sends the clock signal to any peripheral devices.

Pin No.	Pin Name	I/O	Function
1	GD		Digital GND
2	UREC	I	Background-recording mode. Low when active.
3	DIAN	I	Selects ADDT output. ANDT when low. RX when high.
4	S1	I	RX input select 1
5	S2	I	RX input select 2. RX input is selected using S1 and S2. RX1 is selected when S1S2 are 00, RX2 is selected when they are 01, RX3 is selected when they are 10, or OFF is selected when they are 11.
6	GA		Analog GND
7	R1		CR for VCO
8	VCOI	I	VCO input
9	R2		CR for VCO
10	C1		CR for VCO
11	C2		CR for VCO
12	VCOO	I/O	
13	PHCO	O	Phase comparator output
14	PLREF	I/O	
15	PLVAR	I/O	
16	VA		Analog 5V power supply
17	DRECO	O(10mA)	RX direct output
18	RX1	I	RX input 1
19	RX2	I	RX input 2
20	RX3	I	RX input 3
21	VD		Digital 5V power supply
22	TS1	I	Test select 1. Normally set to 0.
23	TS2	I	Test select 2. Normally set to 0.
24	XCLR	I	Reset input. Active when low.
25	RECO	O	Audio data output 2
26	ADDT	O	Audio data output 1
27	LRCK	O	LR clock. 1FS
28	BCK	O	Bit clock. 64FS
29	MCK	O	Master clock. 384FS
30	ANDT	I	Audio data from the A/D converter
31	GD		Digital GND
32	XTLO	O	XTL output
33	XTLI	I	XTL input
34	XTLON	O	XTL oscillation control. Connected to XTLI.
35	MUTE	O	ADDT mute signal
36	RECM	O	RECO mute signal
37	FS1	O	FS information 1
38	FS2	O	FS information 2. FS information is determined by the values of FS1 and FS2. the FS information is 44.1 kHz when FS1 is 0 and FS2 is 0, 48.0 kHz when FS1 is combined 0 and FS2 is 1 or 32.0 kHz when FS1 is 1 and FS2 is 1.
39	EMP	O	EMPHASIS information. EMPHASIS ON when set to 1. EMPHASIS OFF wh
40	VD		Digital 5V power supply

© LSI IC405 (CXD1160P) and IC406 for digital audio signal processing

This LSI is a digital audio signal processing LSI which includes instruction RAM, factor RAM, data RAM, multiplier, and level shifter; serial I/O and delay I/O (Max: Stereo 1024 sample delay) when used for peripheral devices; and a microcomputer interface circuit.

Pin No.	Pin Name	I/O	Function
1	SDT	I	Serial data input receiving instruction, factor, and I/O control transmissions from the microcomputer
2	SCK	I	Serial clock input for SDT. Inputs data at leading edge.
3	XSLD	I	Latch signal input from system microcomputer to latch the serial data in IC. Active when low. (LCK for DPAC1)
4	SI02	I	Input to set the clock number for the serial bit clock BCK contained in sampling time data for CH-1 or CH-2. 32 bit clock mode when connected to GND, 24 bit clock mode when connected to +5V. (This unit is 32 bit machine.)
5	DYSL	I	Mode select input of delay I/O. When it is connected to GND, serial mode is set and the operation is the same as serial I/O. When it is connected to +5V, delay mode is entered and DYSL is connected to the external DRAM (64 Kbit) and is configured as a two-channel delay line.
6	TST	I	Used for test. Normally connected to GND.
7	VSS		GND
8	MCK1		Master clock input 1. The frequency of the ACK signal of the master clock inside the IC is divided in half. When the master clock signal is input through MCK1, MCK2 is connected to +5V.
9	MCK2	I	Master clock input 2. The frequency of the ACK signal of the master master clock inside the IC is as same as this terminal. When the master clock signal is input through MCK2, MCK1 is connected to +5V or GND.
10	SI	I	Serial data input of one sampling for two channels
11	SO	O	Serial data output of one sampling for two channels
12	BCK	I	Serial bit clock input for SI and SO. Serial input data is received at the leading edge of BCK and serial output data is transmitted at the trailing edge. (64FS)
13	LRCK	I	I/O FS clock input (1FS)
14	XOVF	O	Adder/subtractor overflow detection output. low when the overflow is detected.
15	A6	O	External DRAM address output A6
16	A3	O	External DRAM address output A3
17	A4	O	External DRAM address output A4
18	A5	O	External DRAM address output A5
19	A7	O	External DRAM address output A7
20	XCLR	I	Used for test. Normally connected to +5V.
21	VDD	—	+5V power supply
22	A1	O	External DRAM address output A1
23	A2	O	External DRAM address output A2
24	A0	O	External DRAM address output A0
25	XRAS	O	Low address strobe output for external DRAM
26	XWSO	O	Serial data output when DYSL is low. Operation corresponds to mode of serial I/O. Write enable output for external DRAM when DYSL is high.
27	DIO	I/O	Serial data input when DYSL is low. Data is input according to the mode of serial I/O. Data I/O for external DRAM and is the common line for DRAM data input Din and data output Dout when DYSL is high.
28	XCAS	O	Column address strobe output for external DRAM

© System control microcomputer IC501 (HD-63B01YOP) (8 bit, 16K ROM, 256 RAM)

This IC controls all the peripheral devices other than the display. A latch clock (LCK), a bit clock (BCK), and data (serial) are sent when each device is addressed. The BCK is also output to the two microcomputers of the display block so as to send data as required.

Pin No.	Pin Name	I/O	Function															
1	Vss		GND potential															
2	Xtal	O	} 8MHz ceramic oscillator															
3	EXtal	I																
4	MP <sub>0</sub>	I	} Sets the operation mode of the microcomputer's chip. Used as a single chip.															
5	MP <sub>1</sub>	I																
6	RES	I	Used to reset.															
7	STBY	I	Used to enter the standby status.															
8	NMI	I	Non-maskable interrupt terminal (Processed when power is off.)															
9	Aub	I	Audio bus input															
10	Bck	O	All bit clocks															
11	Data	O	All serial data															
12	RX	I	RS-232C input. Panel command's extended command input															
13	TX	O	RS-232C output. Internal amplifier status output															
			} 4800BPS 8-bit 1 stop bit, parity none, 0 - 5V															
14	DPAC 1Lck	O	DPAC 1 (Dynamic) latch clock															
15	DPAC 2LCK	O	DPAC 2 (EQ) latch clock															
16	DPS LCK	O	DPS (Surround) latch clock															
17	Key Scan	I	} Key scan inputs (7)															
18	Key Scan	I																
19	Key Scan	I																
20	Key Scan	I																
21	Key Scan	I																
22	Key Scan	I																
23	Key Scan	I																
24	No use	O	Not used.															
25	Key Scan & Vol A/D	O	} Key scan outputs (6) and volume position detection A/D outputs (4)															
26		O																
27		O																
28		O																
29		O																
30		O																
31	No use	O	Not used.															
32	Vol ADin	I	Volume position detection A/D input (comparator input)															
33	Vdd		5V±10% power supply (The battery should be backed up.)															
34	DAT REC	O	DAT REC (Low when REC is off.)															
35	D SEL 1	O	} Digital input select (*1)															
36	D SEL 2	O																
		<table><tr><td>*1</td><td>D SEL 1</td><td>D SEL 2</td></tr><tr><td>CD</td><td>1</td><td>0</td></tr><tr><td>DAT</td><td>0</td><td>1</td></tr><tr><td>BS</td><td>0</td><td>0</td></tr><tr><td>OFF</td><td>1</td><td>1</td></tr></table>		*1	D SEL 1	D SEL 2	CD	1	0	DAT	0	1	BS	0	0	OFF	1	1
*1	D SEL 1	D SEL 2																
CD	1	0																
DAT	0	1																
BS	0	0																
OFF	1	1																
37	D/A	O	High during digital input. Low during analog (ADC) input.															
38	Mute	I	Mutes the input when PLL is locked or released (high when active.)															
39	Fs 1	I	} FS (sampling frequency) information input (*2)															
40	Fs 2	I																
		<table><tr><td>*2</td><td>Fs 1</td><td>Fs 2</td></tr><tr><td>32k</td><td>1</td><td>1</td></tr><tr><td>44.1k</td><td>0</td><td>0</td></tr><tr><td>48k</td><td>0</td><td>1</td></tr><tr><td>—</td><td>1</td><td>0</td></tr></table>		*2	Fs 1	Fs 2	32k	1	1	44.1k	0	0	48k	0	1	—	1	0
*2	Fs 1	Fs 2																
32k	1	1																
44.1k	0	0																
48k	0	1																
—	1	0																
41	Emphasis	I	Emphasis information (high when active)															
42	Vss	I	GND potential															
43	14/16	I	Selects the word length of internal data input in digital signal processing. (Usually, set to 16-bit.)															
44	8dB	O	} Analog gain select switch control (Fixed at the word length of 14-bit data by +12dB.)															
45	4dB	O																
46	2dB	O																

Pin No.	Pin Name	I/O	Function			
47	ATT LCK	0	REC OUT DF off latch clock			
48	LC7821	0	Input selector LC7821 latch clock			
49	Disp 2	0	Display microcomputer ② (part of FLT and LED). Bit clock gate control			
50	Disp 1	0	Display microcomputer ① (FLT's frequency response display and wipe display). Bit clock gate control			
51	STBY IN	0	Standby (backup) control			
52	VOL LED	0	Volume LED			
53	RESET OUT	0	Reset signal for peripheral devices			
54	Mute OUT	0	Mute signal for peripheral devices			
55	Video B	0	} Video input selector (*3)	*3	A	B
56	Video A	0		Video 1	0	1
				Video 2	0	0
				Video 3	1	0
				BS	1	1
57	Motor Vol	0	} Motor volume control (*4)	*4	up	down
58	Motor Vol	0		up	0	1
				down	1	0
				stop	1	1
				stop	0	0
59	No use	0	} Not used.			
60	No use	0				
61	No use	0				
62	No use	0				
63	No use	0				
64	E	0	E clock output, 50% duty cycle, 2MHz output (AC1A clock)			

© Display control microcomputer IC614 (μPD78C11)(internal 8-bit analog-to-digital converter)

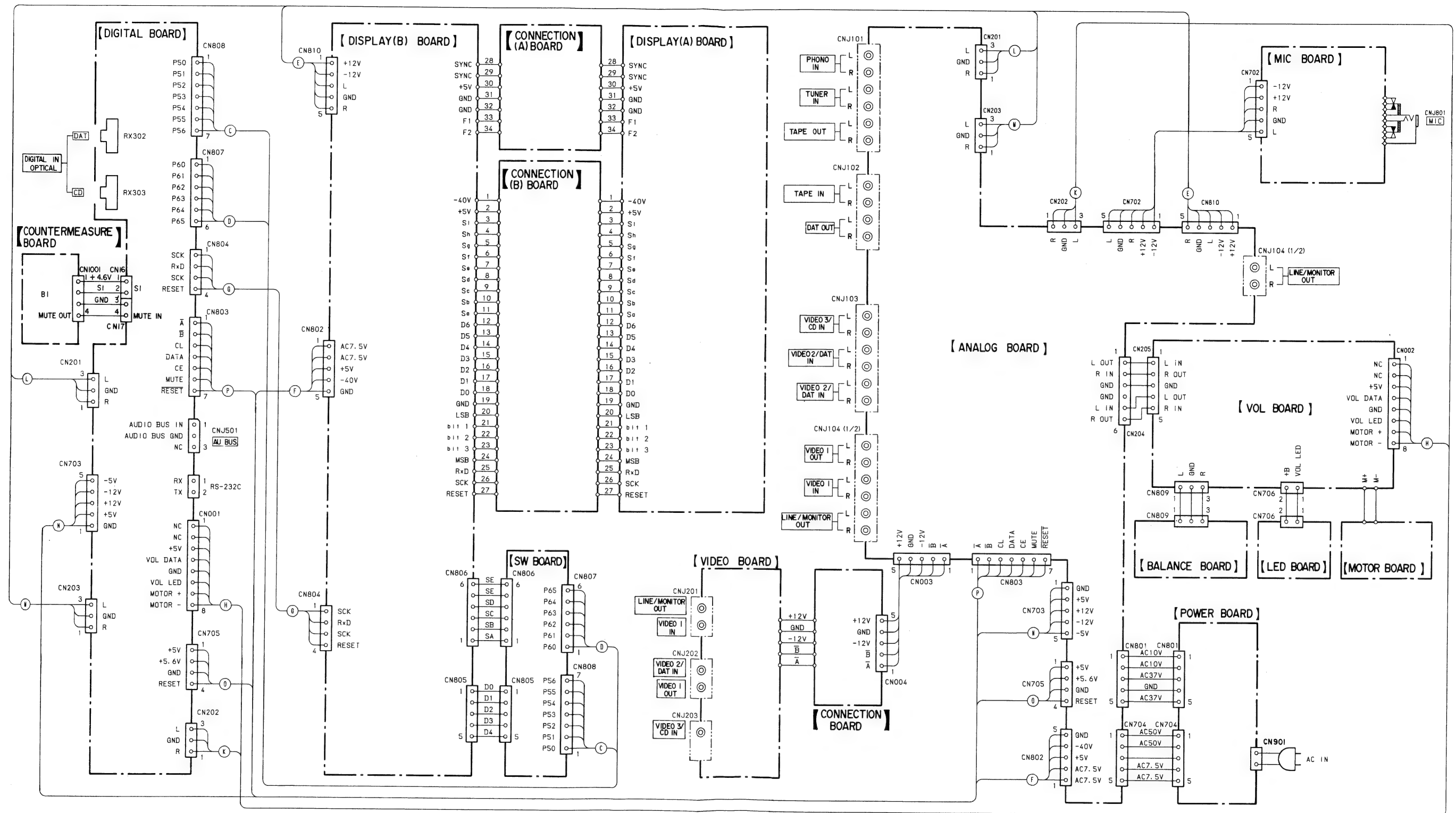
- A/D conversion for spectrum analyzer  
Using an internal 8-bit A/D converter, the 11-channel analog signal for a spectrum analyzer is A/D-converted and compressed in logarithm, then sent to the display microcomputer and IC613 as 5-bit parallel data. The analog data is loaded by time-shifting 12 channels (BPF(11) + analog GND (1)) 6 channels at a time and sampling them.
- Fluorescent indicator display  
The data (8×14 bits) received from the main microcomputer is synchronized with IC613 for dynamic display (9 SEG × 7 DIG).
- LED display  
The data (8×5 bits) received from the main microcomputer is synchronized with IC613 for dynamic display (7 SEG × 7 DIG).

Pin No.	Pin Name	I/O	Active	Function	Remarks
1	PA0	I	L		Connected to Vss.
2	PA1	0	L	LED segment A	Pulled up.
3	PA2	0	L	LED segment B	Pulled up.
4	PA3	0	L	LED segment C	Pulled up.
5	PA4	0	L	LED segment D	Pulled up.
6	PA5	0	L	LED segment E	Pulled up.
7	PA6	0	L	LED segment F	Pulled up.
8	PA7	0	L	LED segment G	Pulled up.
9	PB0	0	H	LED digit 0	Pulled down.
10	PB1	0	H	LED digit 1	Pulled down.
11	PB2	0	H	LED digit 2	Pulled down.
12	PB3	0	H	LED digit 3	Pulled down.
13	PB4	0	H	LED digit 4	Pulled down.
14	PB5	0	L	Spectrum analyzer A/D data output (LSB)	Pulled up.
15	PB6	0	L	Spectrum analyzer A/D data output (Bit 1)	Pulled up.
16	PB7	0	L	Spectrum analyzer A/D data output (Bit 2)	Pulled up.
17	PC0	I			Connected to Vss.

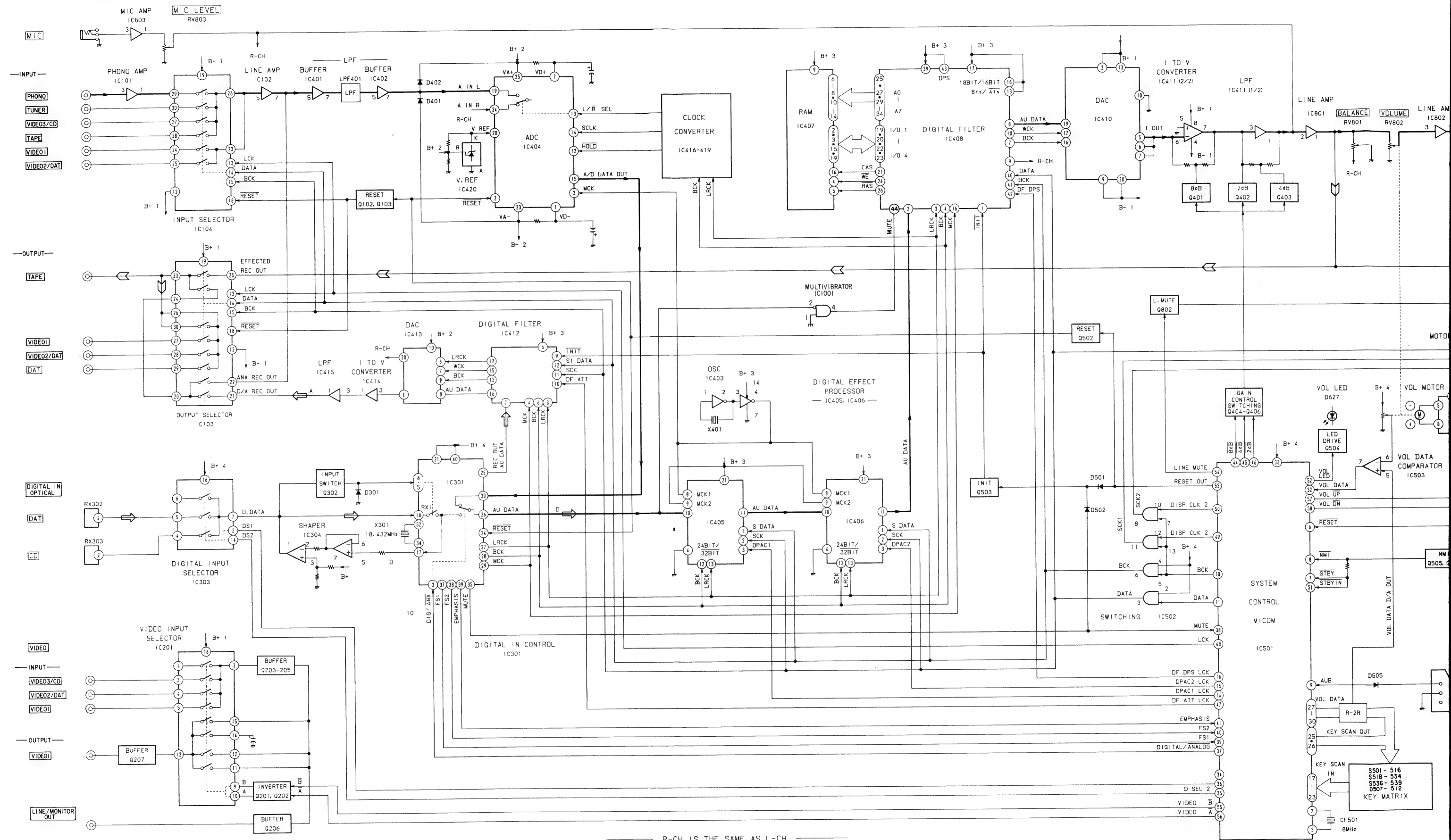
Pin No.	Pin Name	I/O	Active	Function	Remarks
18	Rx D	I	H	Serial interface data	Pulled down.
19	SCK	I	H	Serial interface clock	Pulled down.
20	PC3	I			Connected to Vss.
21	PC4	0	L	Spectrum analyzer A/D data output (Bit 3)	Pulled up.
22	PC5	0	L	Spectrum analyzer A/D data output (MSB)	Pulled up.
23	PC6	0	H	A/D input channel changeover	Pulled down.
24	PC7	I	L	Frame sync signal input	Pulled up.
25	NMI	I	L		Connected to Vdd.
26	INT 1	I	EDGE	Frame sync signal input	Pulled up.
27	MODE 1				Connected to Vdd.
28	RESET	I	L	Reset signal input	Pulled up.
29	MODE 0				Connected to Vss.
30	X2			Ceramic oscillator	
31	X1			Ceramic oscillator	
32	Vss			GND	Vss
33	AVss			Analog GND	
34	AN0	I	Analog	Analog input CH0/CH6	
35	AN1	I	Analog	Analog input CH1/CH7	
36	AN2	I	Analog	Analog input CH2/CH8	
37	AN3	I	Analog	Analog input CH3/CH9	
38	AN4	I	Analog	Analog input CH4/CH10	
39	AN5	I	Analog	Analog input CH5	
40	AN6	I	Analog		
41	AN7	I	Analog		
42	AVref			A/D converter reference voltage	
43	AVdd			A/D converter power supply	
44	RD	0			NC
45	WR	0			NC
46	ALE	0			NC
47	PF0	0	L	FL tube digit 0	Pulled up.
48	PF1	0	L	FL tube digit 1	Pulled up.
49	PF2	0	L	FL tube digit 2	Pulled up.
50	PF3	0	L	FL tube digit 3	Pulled up.
51	PF4	0	L	FL tube digit 4	Pulled up.
52	PF5	0	L	FL tube digit 5	Pulled up.
53	PF6	0	L	FL tube digit 6	Pulled up.
54	PF7	0	L	FL segment a	Pulled up.
55	PD0	0	L	FL segment b	Pulled up.
56	PF1	0	L	FL segment c	Pulled up.
57	PF2	0	L	FL segment d	Pulled up.
58	PF3	0	L	FL segment e	Pulled up.
59	PF4	0	L	FL segment f	Pulled up.
60	PF5	0	L	FL segment g	Pulled up.
61	PF6	0	L	FL segment h	Pulled up.
62	PF7	0	L	FL segment i	Pulled up.
63	STOP	I	L		Connected to Vdd.
64	Vdd			Microcomputer power supply	



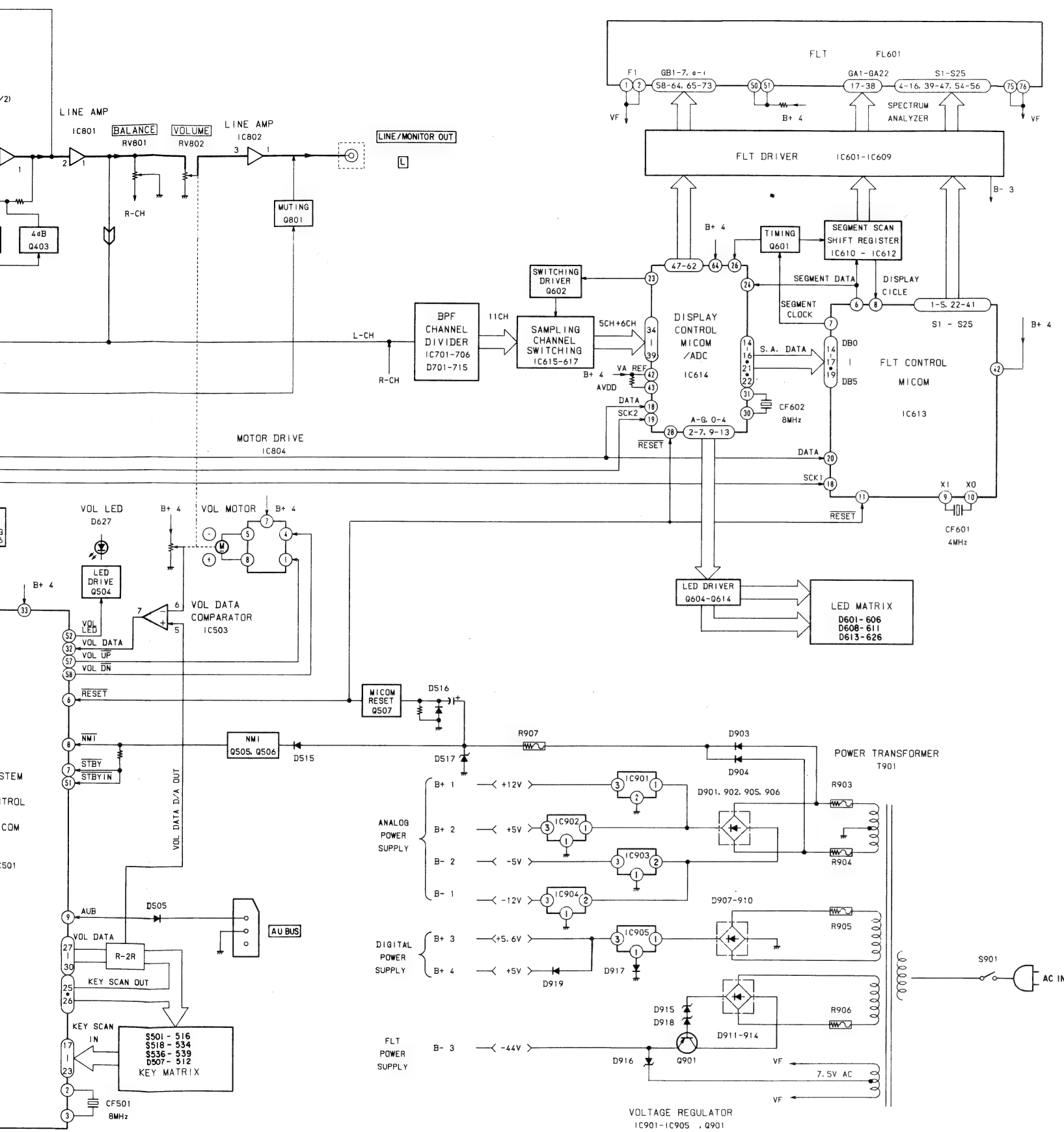
### 3-2. FRAME HARNESS



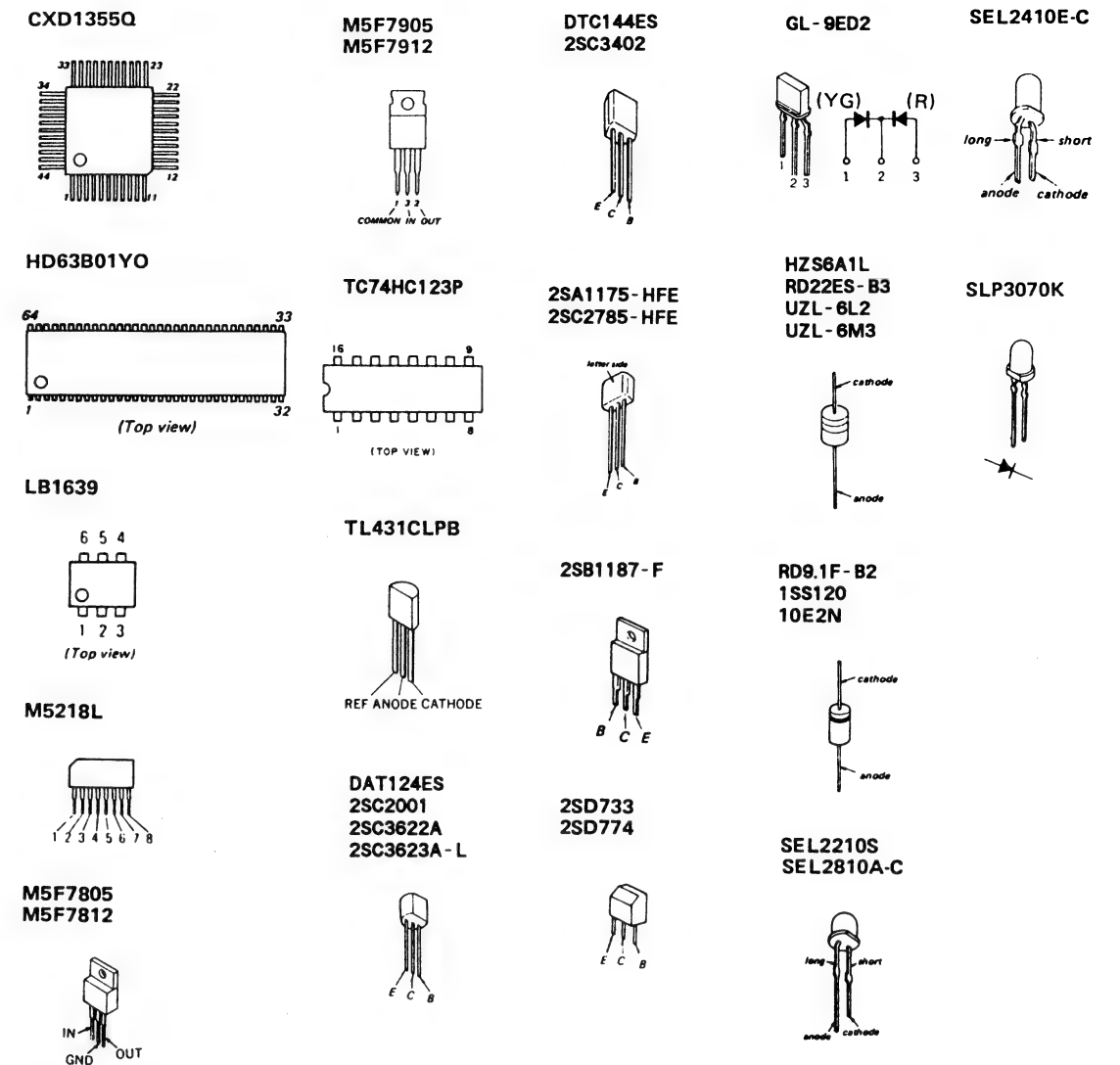
### 3-3. BLOCK DIAGRAM



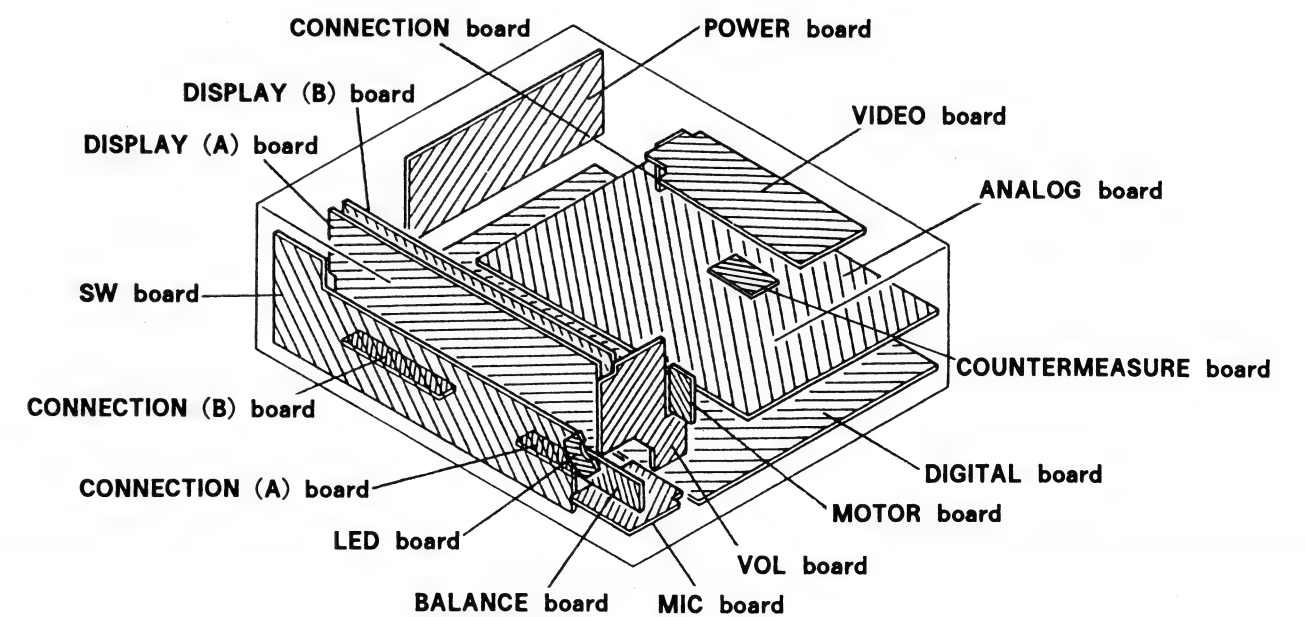
- : PHONO SIGNAL
- ▷ : EFFECT REC SIGNAL
- ⇨ : DIGITAL SOURCE SIGNAL



# • Semiconductor Lead Layouts



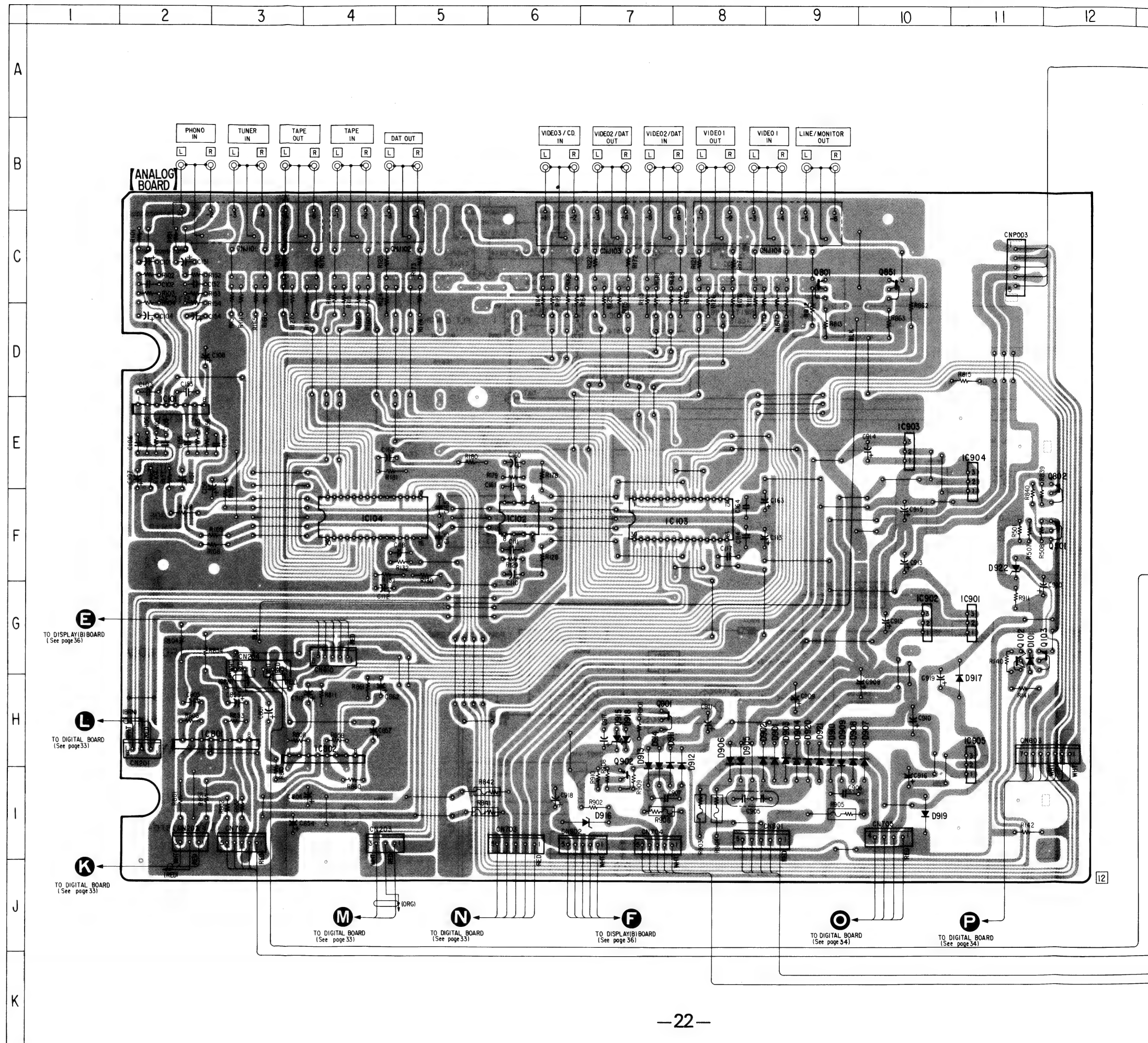
# • CIRCUIT BOARD LOCATION



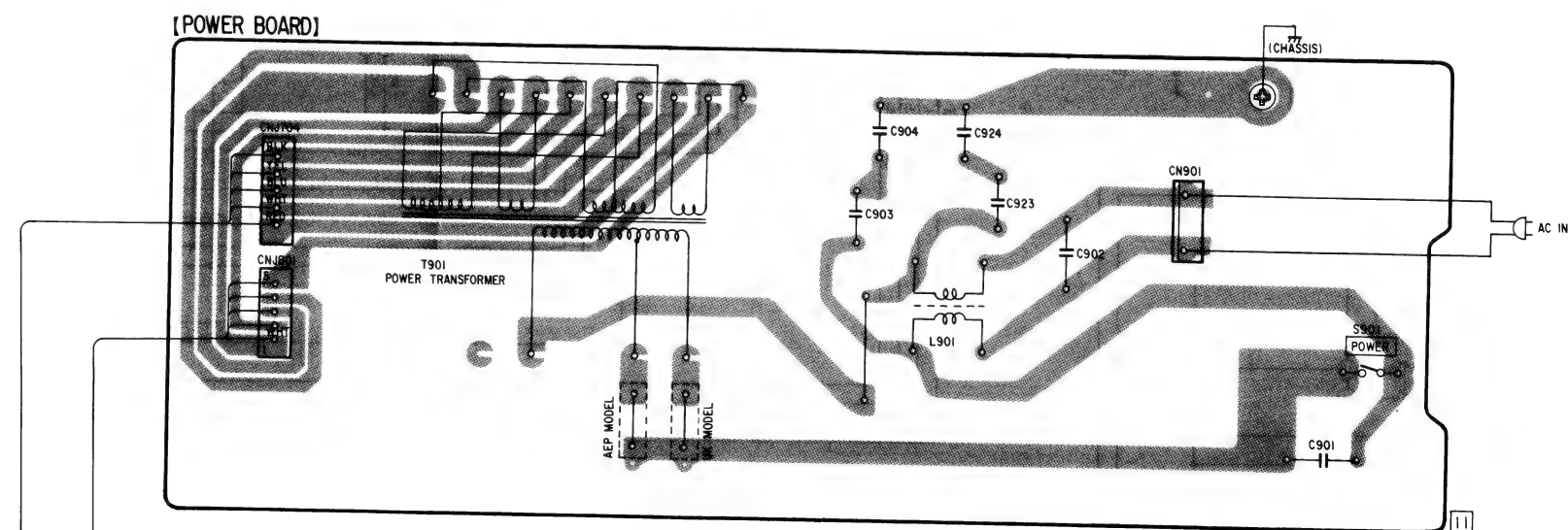
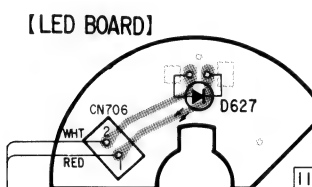
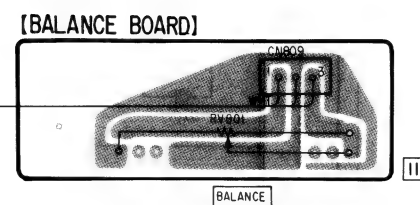
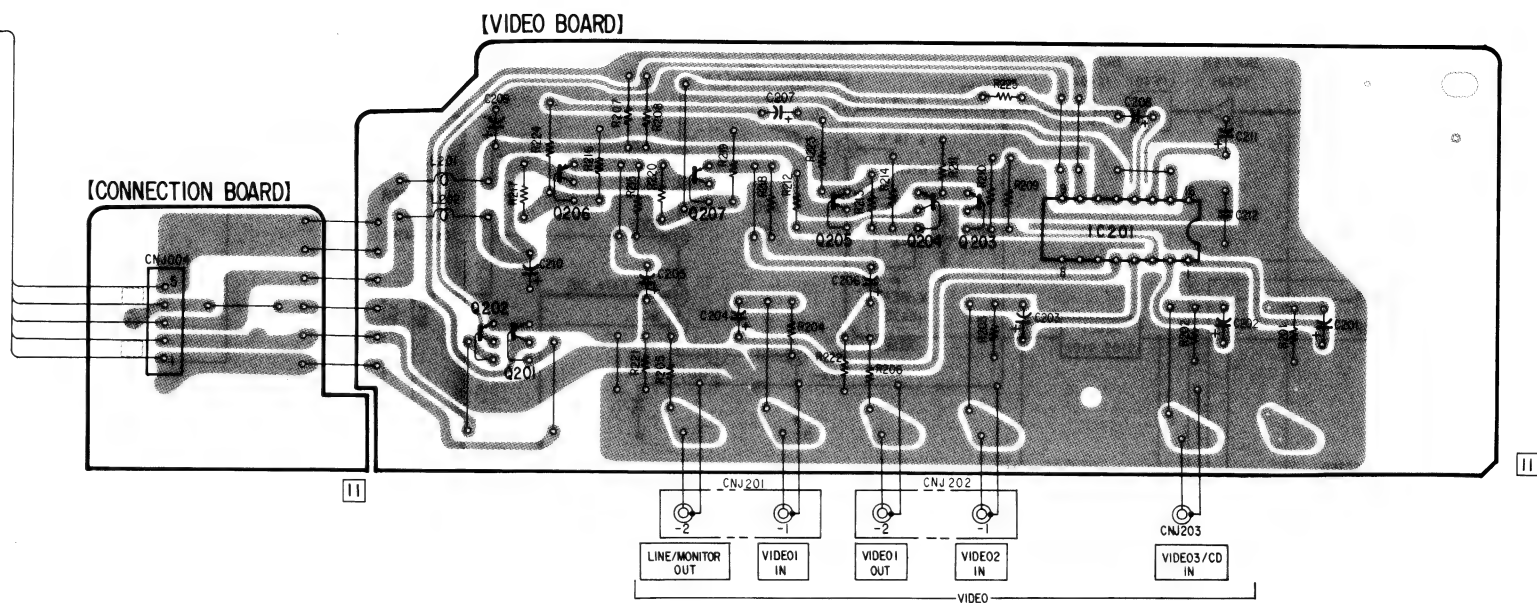
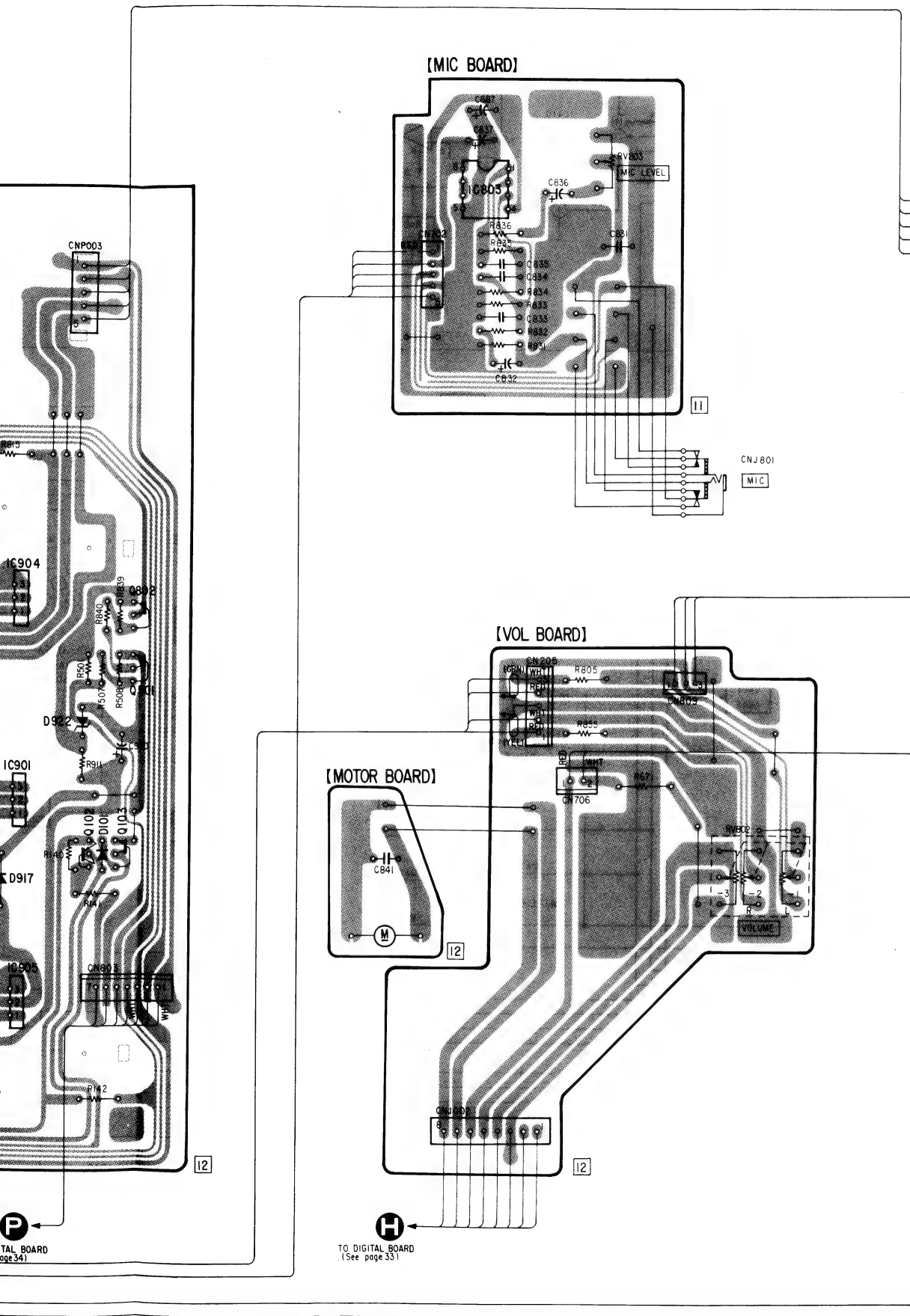
- **Semiconductor Location**

Ref. NO.	Location	Ref. No.	Location
D101	G- 11	IC104	F- 4
D627	E- 24	IC201	B- 24
D901	H- 9	IC801	H- 3
D902	H- 8	IC802	H- 4
D903	H- 9	IC803	B- 14
D904	H- 9	IC901	G- 11
D905	H- 8	IC902	G- 10
D906	H- 8	IC903	E- 10
D907	H- 10	IC904	E- 11
D908	H- 9	IC905	H- 11
D909	H- 9		
D910	H- 9	Q102	G- 11
D911	H- 7	Q103	G- 12
D912	H- 8	Q201	C- 20
D913	H- 7	Q202	C- 20
D914	H- 7	Q203	B- 23
D915	H- 7	Q204	B- 23
D916	I- 7	Q205	B- 22
D917	G- 11	Q206	B- 20
D918	H- 7	Q207	B- 21
D919	I- 10	Q501	F- 12
D920	H- 9	Q801	C- 9
D921	H- 9	Q802	E- 12
D922	F- 11	Q851	C- 10
		Q901	H- 7
IC101	E- 2	Q902	I- 7
IC102	F- 6		
IC103	F- 8		

**Note:**  
● ○ — : parts extracted from the component side.

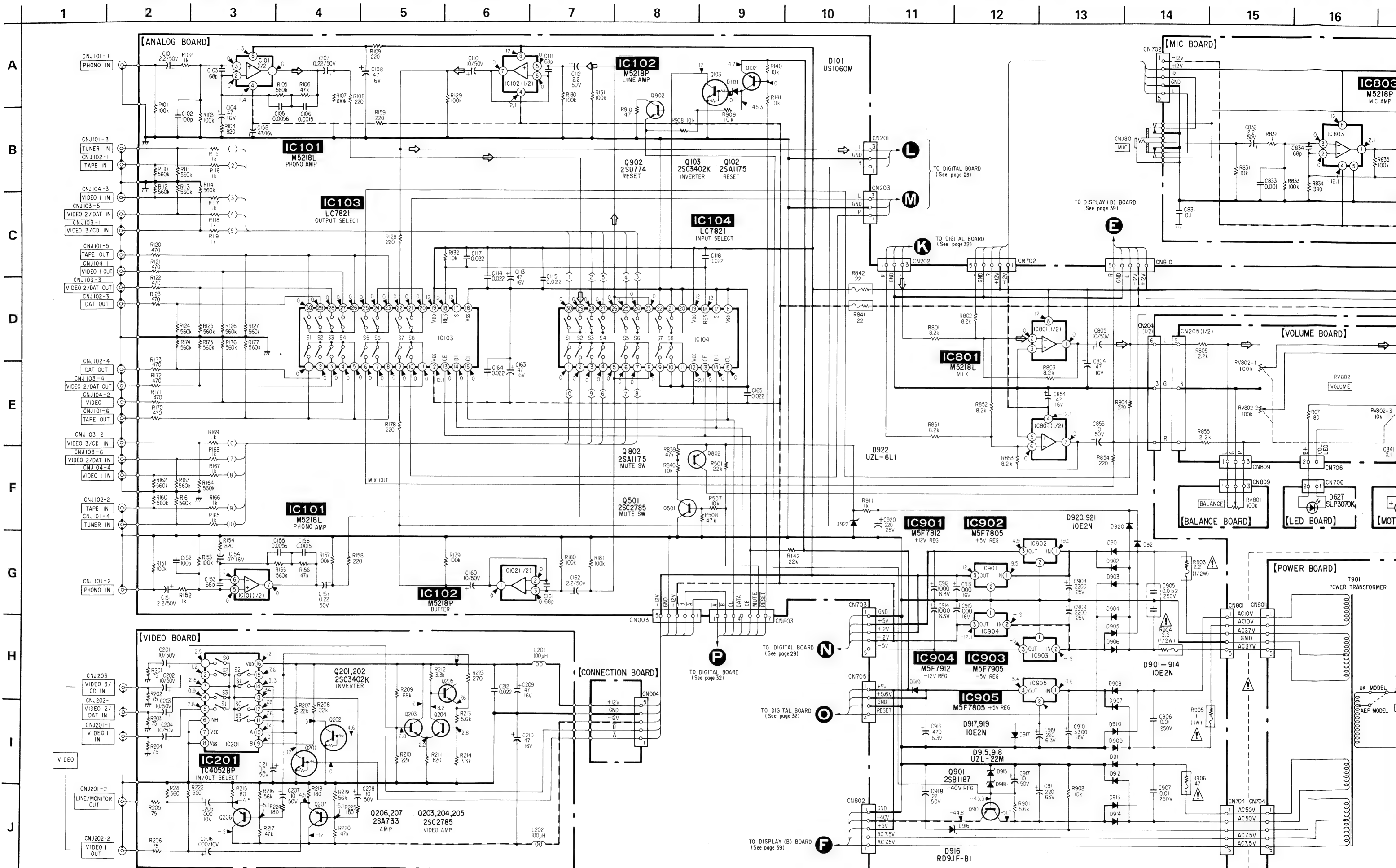


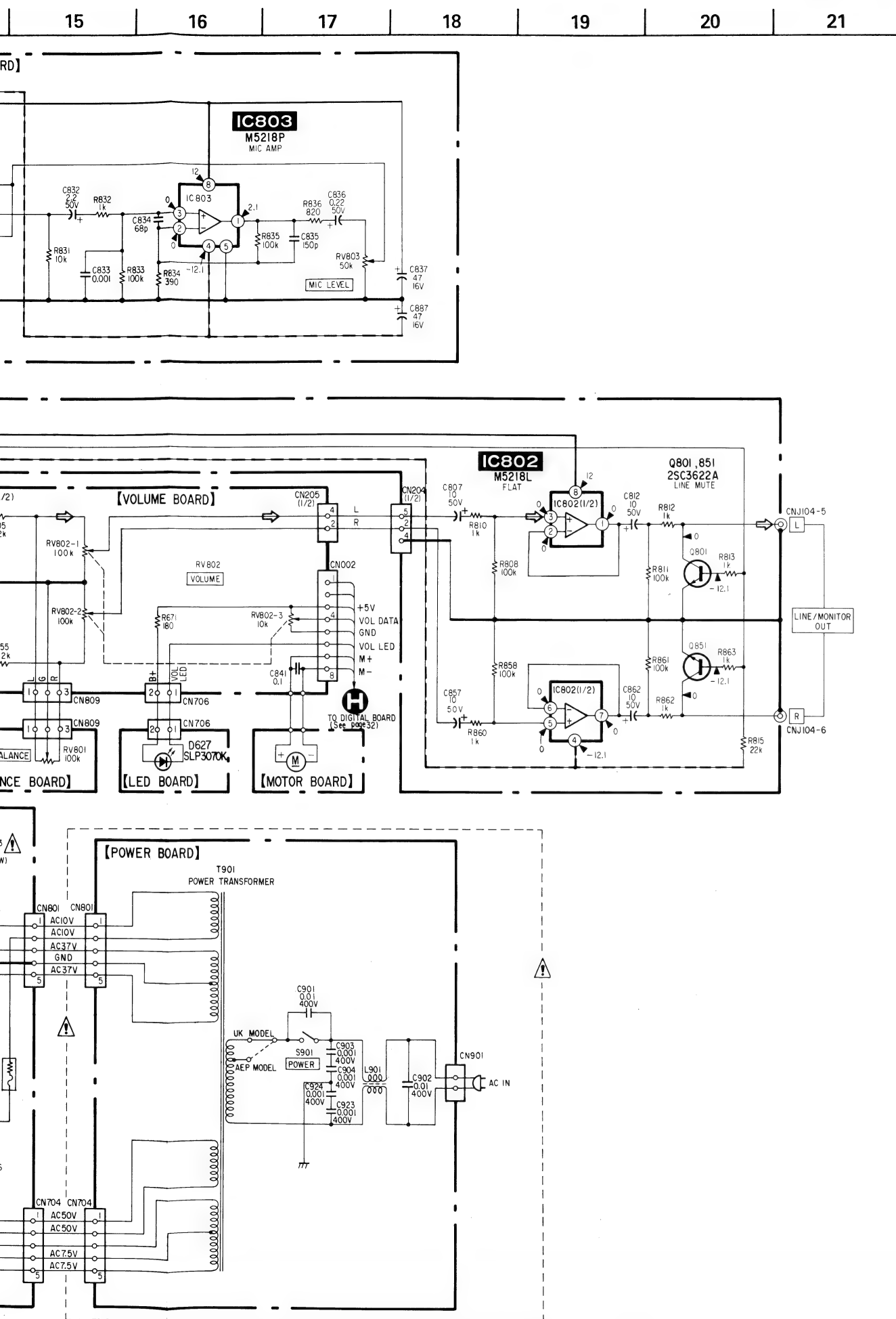






# 3-5. SCHEMATIC DIAGRAM — ANALOG SECTION —





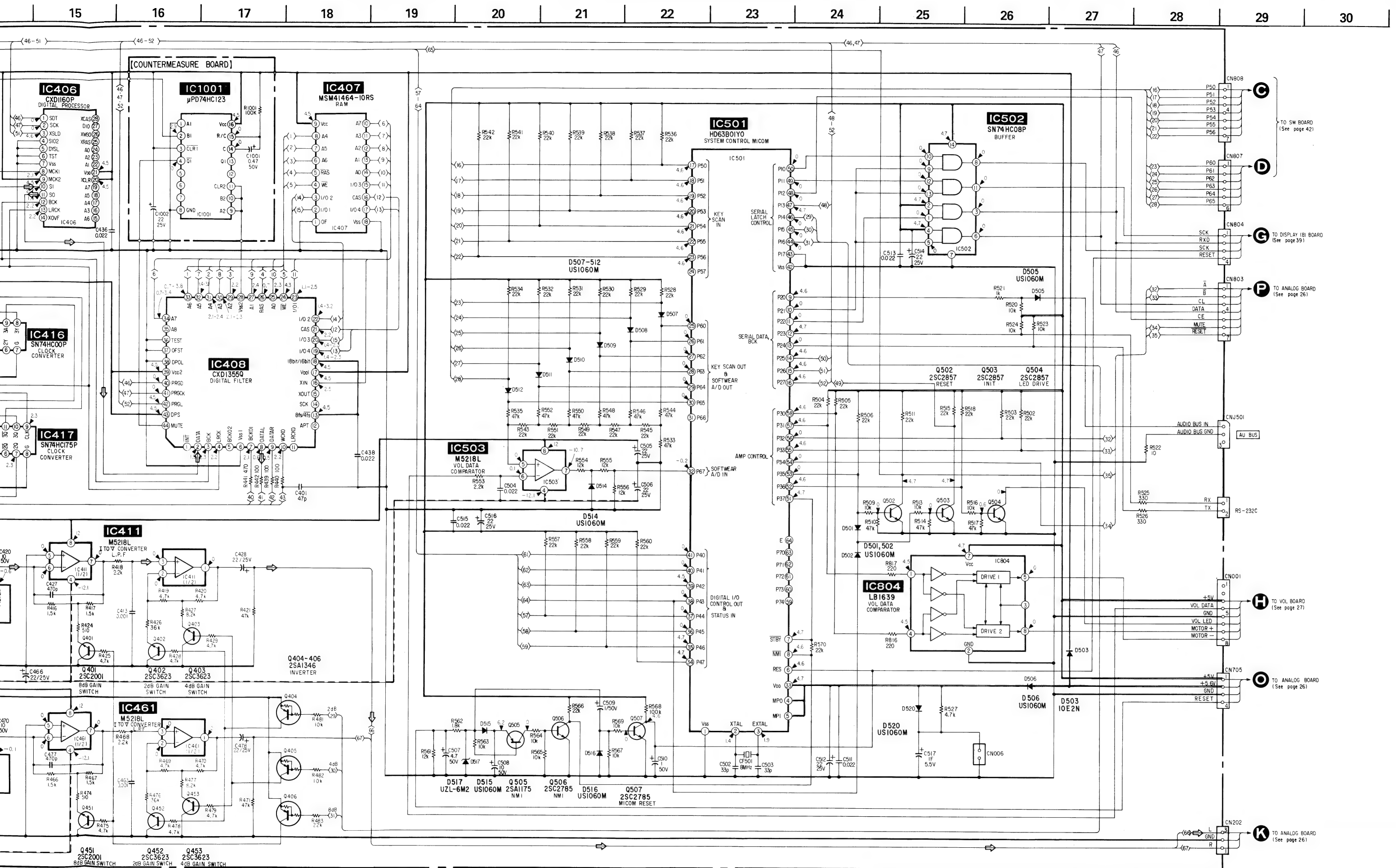
# Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- : fusible resistor.
- : B+ Line
- : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.  
no mark: PHONO
- Voltages are taken with a VOM (input impedance 10M  $\Omega$ )  
Voltage variations may be noted due to normal production tolerances.
- Signal path.  
 : PHONO
- Switch

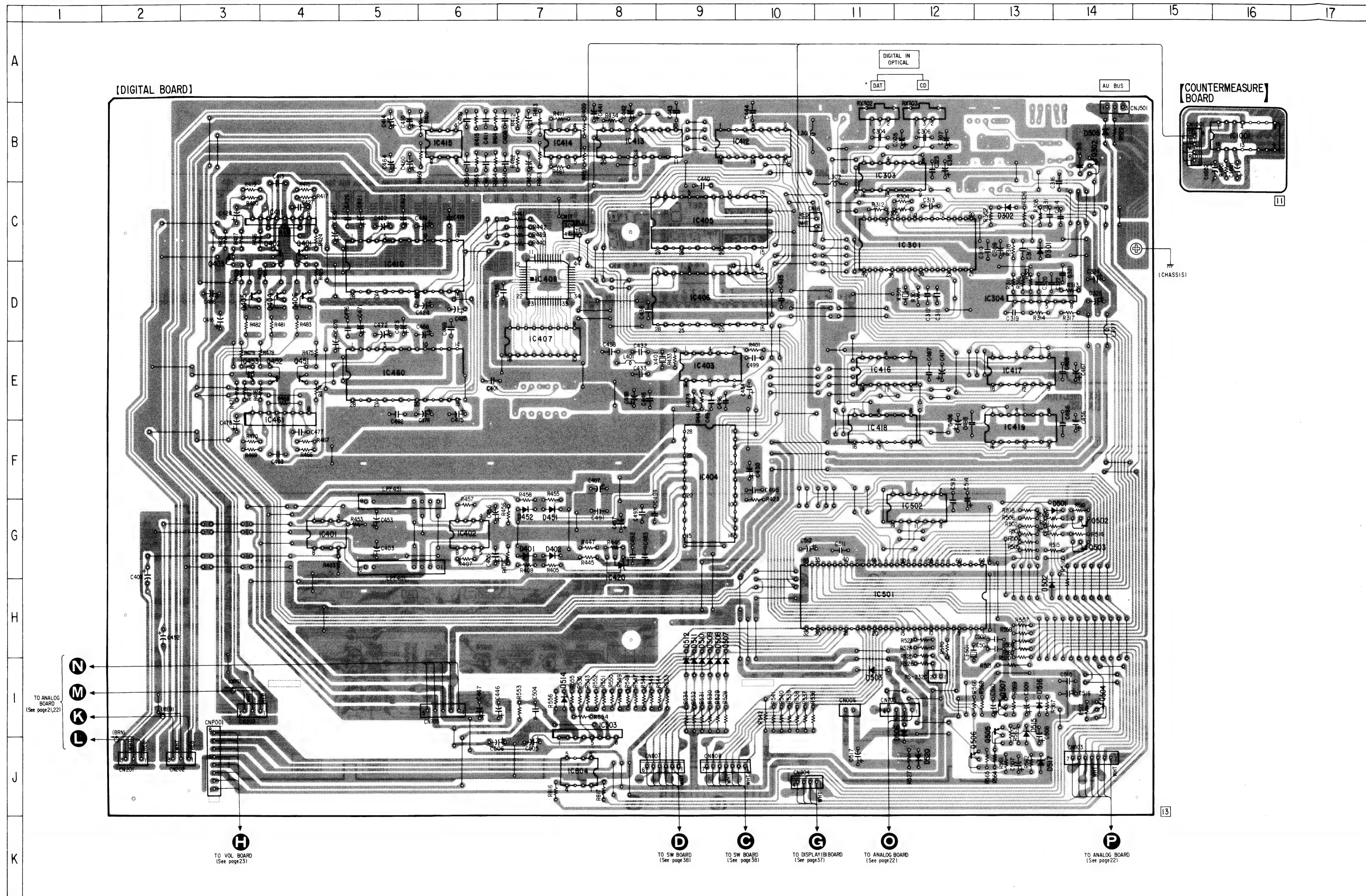
Ref. No.	Switch	Position
S501	MEMORY	OFF
S502	3	OFF
S503	10	OFF
S504	9	OFF
S505	6	OFF
S506	PHONO	OFF
S507	TUNER	OFF
S508	DIGITAL CONTROLLER	OFF
S509	4	OFF
S510	7	OFF
S511	8	OFF
S512	5	OFF
S513	2	OFF
S514	1	OFF
S515	CD	OFF
S516	DAT	OFF
S518	VIDEO 1	OFF
S519	VIDEO 2/DAT	OFF
S520	VIDEO 3/CD	OFF
S521	TAPE	OFF
S522	FREQUENCY 1	OFF
S523	FREQUENCY 2	OFF
S524	SURROUND CONTROL	OFF
S525	DIGITAL CONTROLLER	OFF
S526	PRESET CALL	OFF
S527	REVERSE	OFF
S528	EQ SLOP	OFF
S529	DIGITAL CONTROLLER ▼	OFF
S530	FREQUENCY 3	OFF
S531	FLAT	OFF
S532	DIGITAL DYNAMIC SOUND	OFF
S533	DIGITAL PRESENCE SURROUND	OFF
S534	DIGITAL CONTROLLER ▲	OFF
S536	DIGITAL EJECT	OFF
S537	EQUALIZER RECORDING	OFF
S538	DISPLAY	OFF
S539	CLEAR	OFF
S901	POWER	OFF

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.



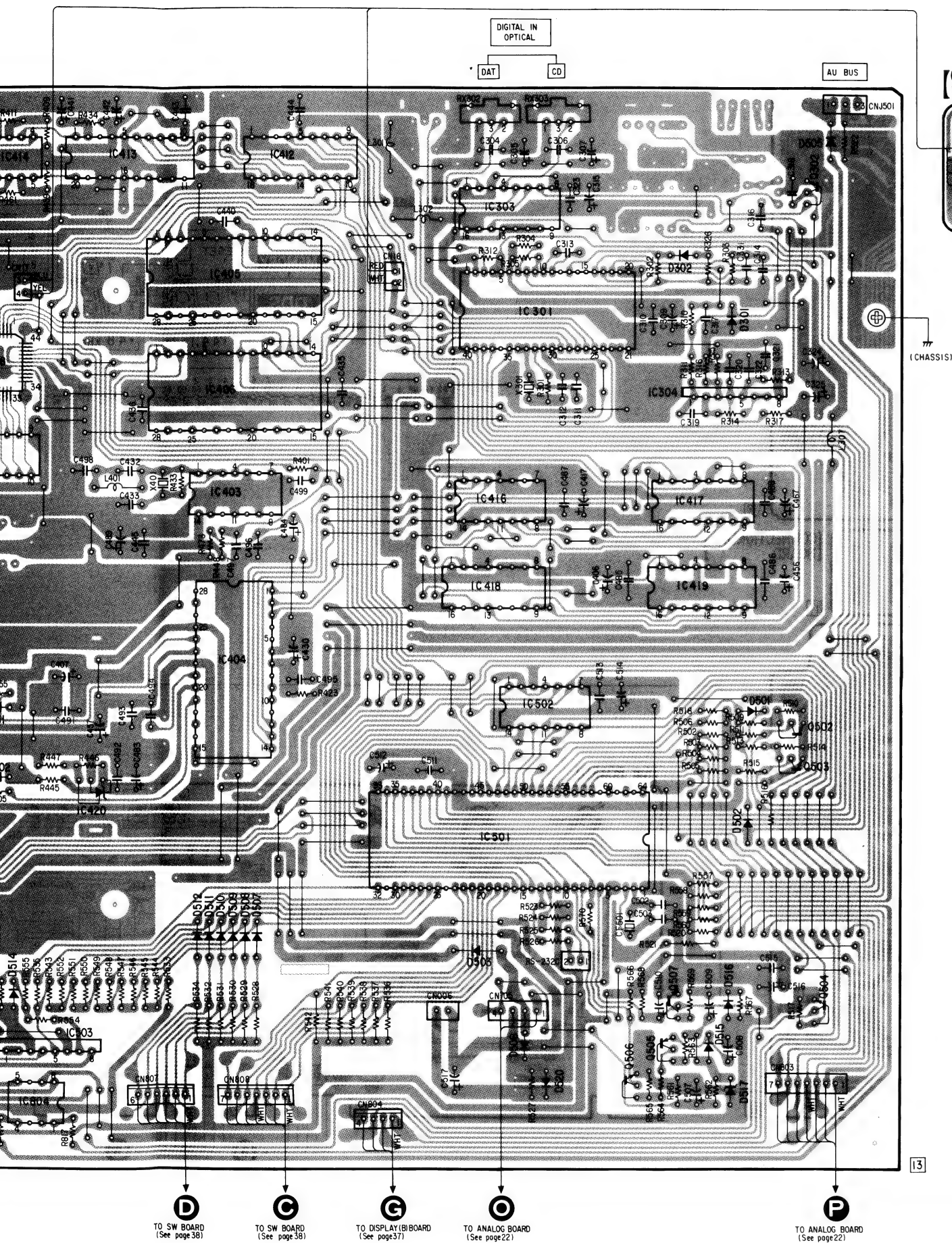








8	9	10	11	12	13	14	15	16	17
---	---	----	----	----	----	----	----	----	----



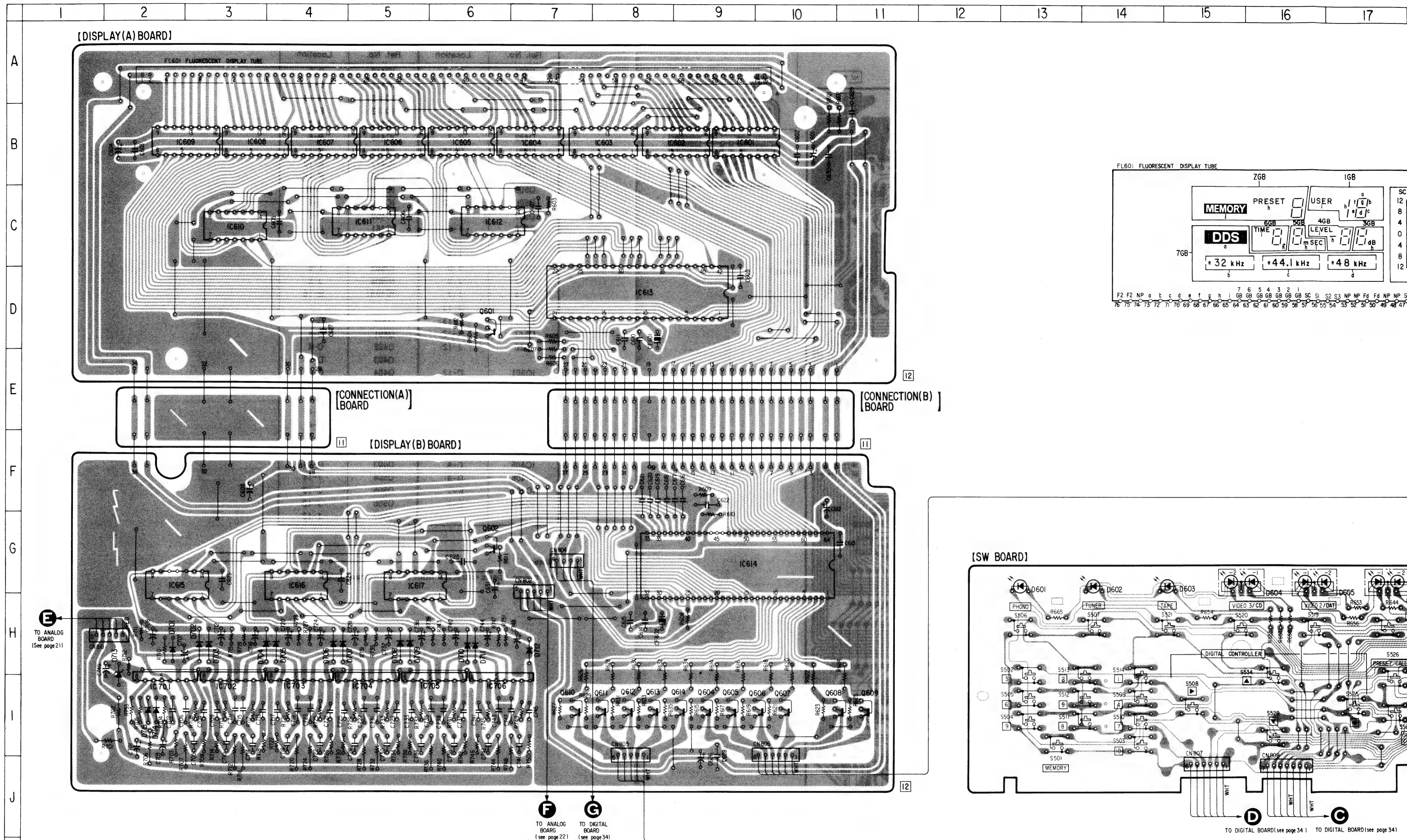
## • Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	C-13	IC410	D-5
D302	C-13	IC411	C-4
D401	G-7	IC412	B-10
D402	G-7	IC413	B-8
D451	G-7	IC414	B-7
D452	G-7	IC415	B-6
D501	G-14	IC416	E-11
D502	H-13	IC417	E-13
D503	I-11	IC418	F-11
D505	B-14	IC419	F-13
D506	J-12	IC420	G-8
D507	I-9	IC460	E-5
D508	I-9	IC461	E-4
D509	I-9	IC501	H-11
D510	I-9	IC502	G-12
D511	I-9	IC503	I-8
D512	I-9	IC804	J-8
D514	I-7	IC1001	B-16
D515	J-13		
D516	I-13	Q302	B-14
D517	J-13	Q401	C-4
D520	J-12	Q402	C-4
		Q403	D-3
		Q404	D-4
		Q405	D-3
		Q406	D-4
		Q451	E-4
		Q452	E-4
		Q453	E-3
		Q502	G-14
		Q503	G-14
		Q504	I-14
		Q505	J-13
		Q506	J-12
		Q507	I-13
IC301	C-12		
IC303	B-11		
IC304	D-13		
IC401	G-4		
IC402	G-6		
IC403	E-9		
IC404	F-9		
IC405	C-9		
IC406	D-9		
IC407	E-7		
IC408	D-7		

## Note:

- ○ — : parts extracted from the component side.



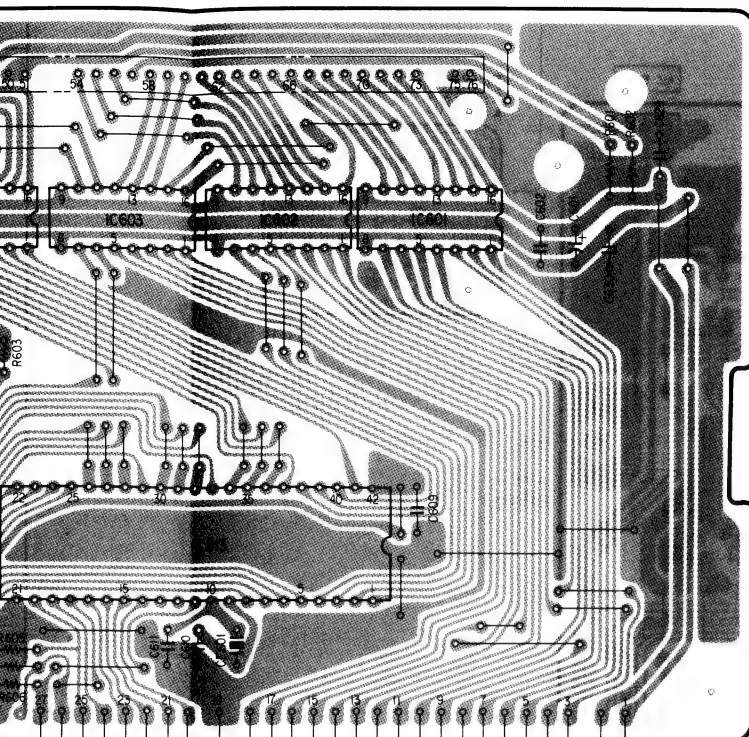


**Note:**

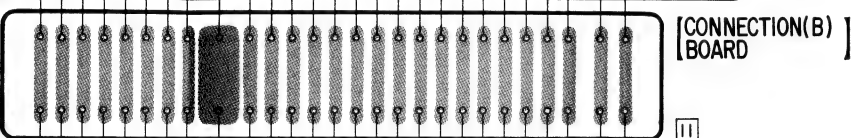
- ○ — : parts extracted from the component side.



7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

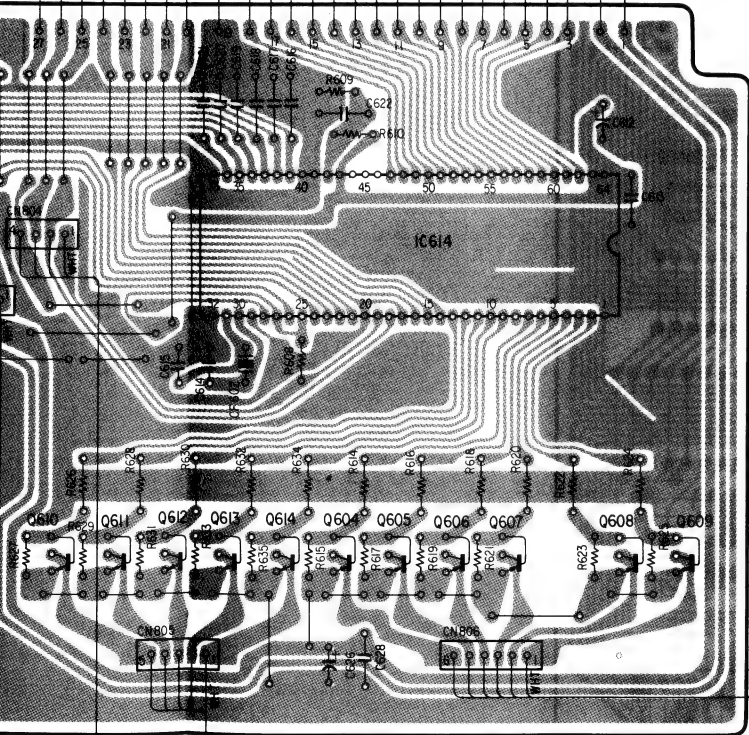


12



CONNECTION(B)  
BOARD

11

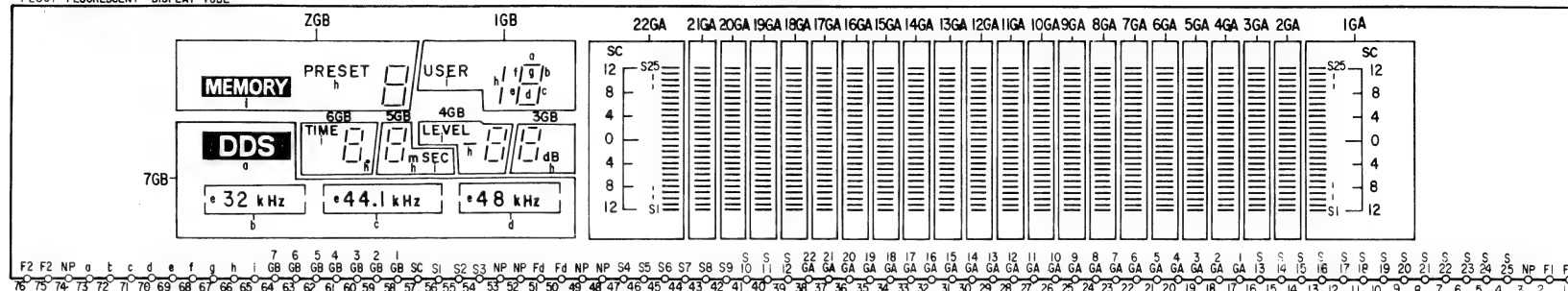


12

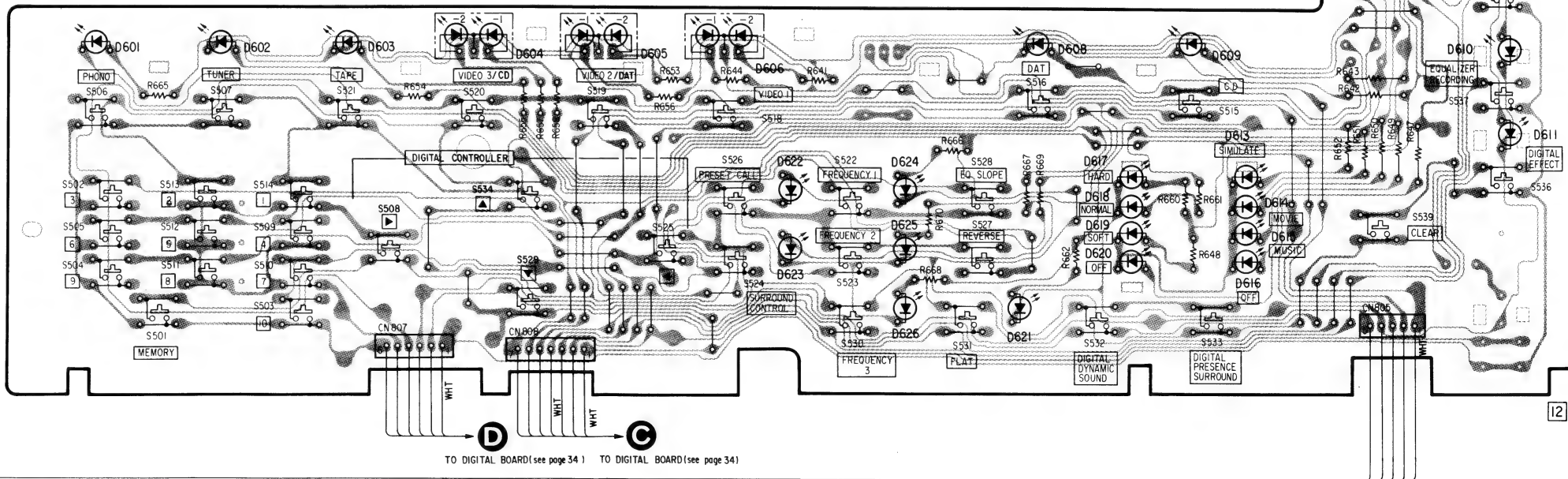
TO ANALOG  
BOARD  
(see page 22)

TO DIGITAL  
BOARD  
(see page 34)

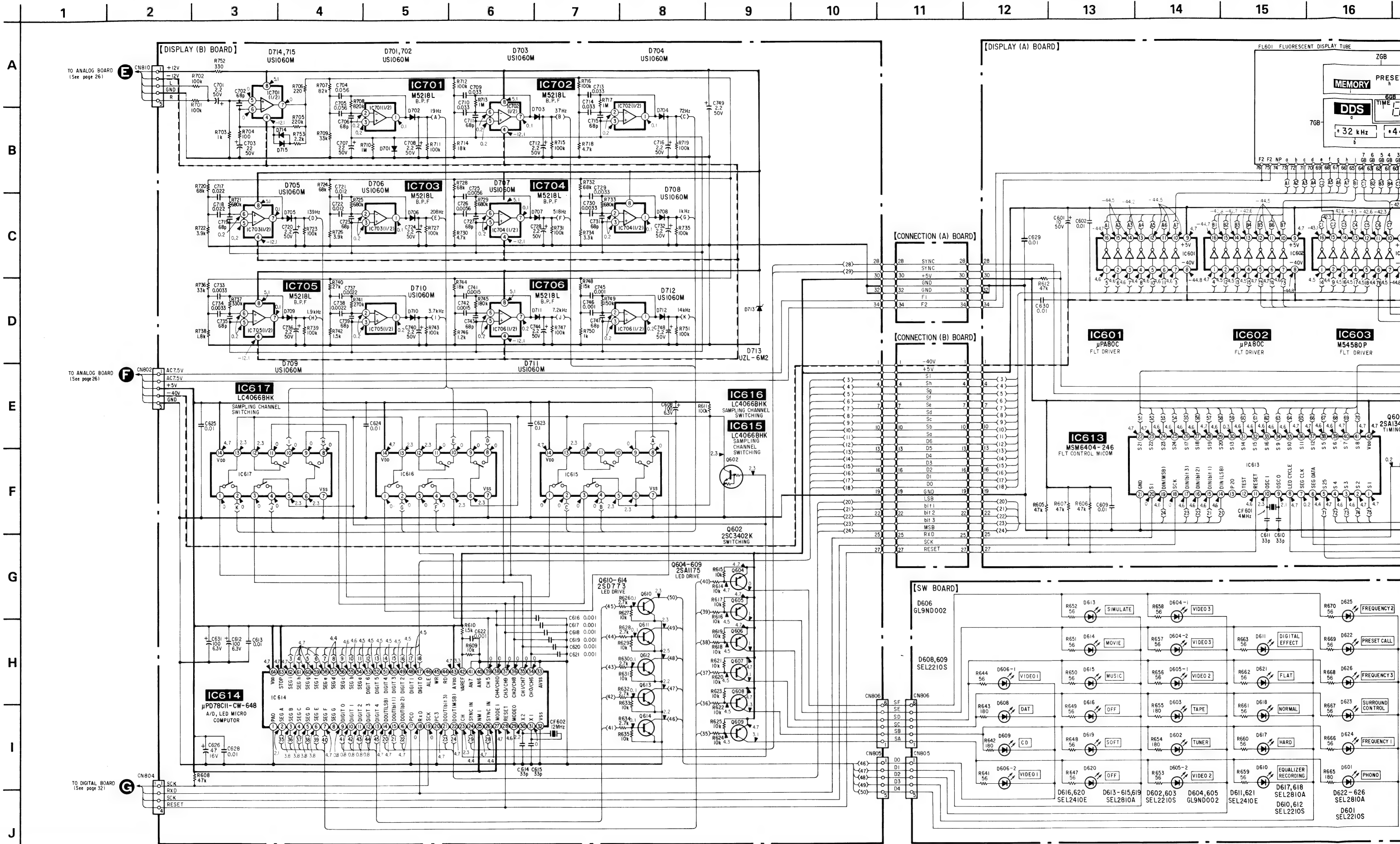
FL601 FLUORESCENT DISPLAY TUBE

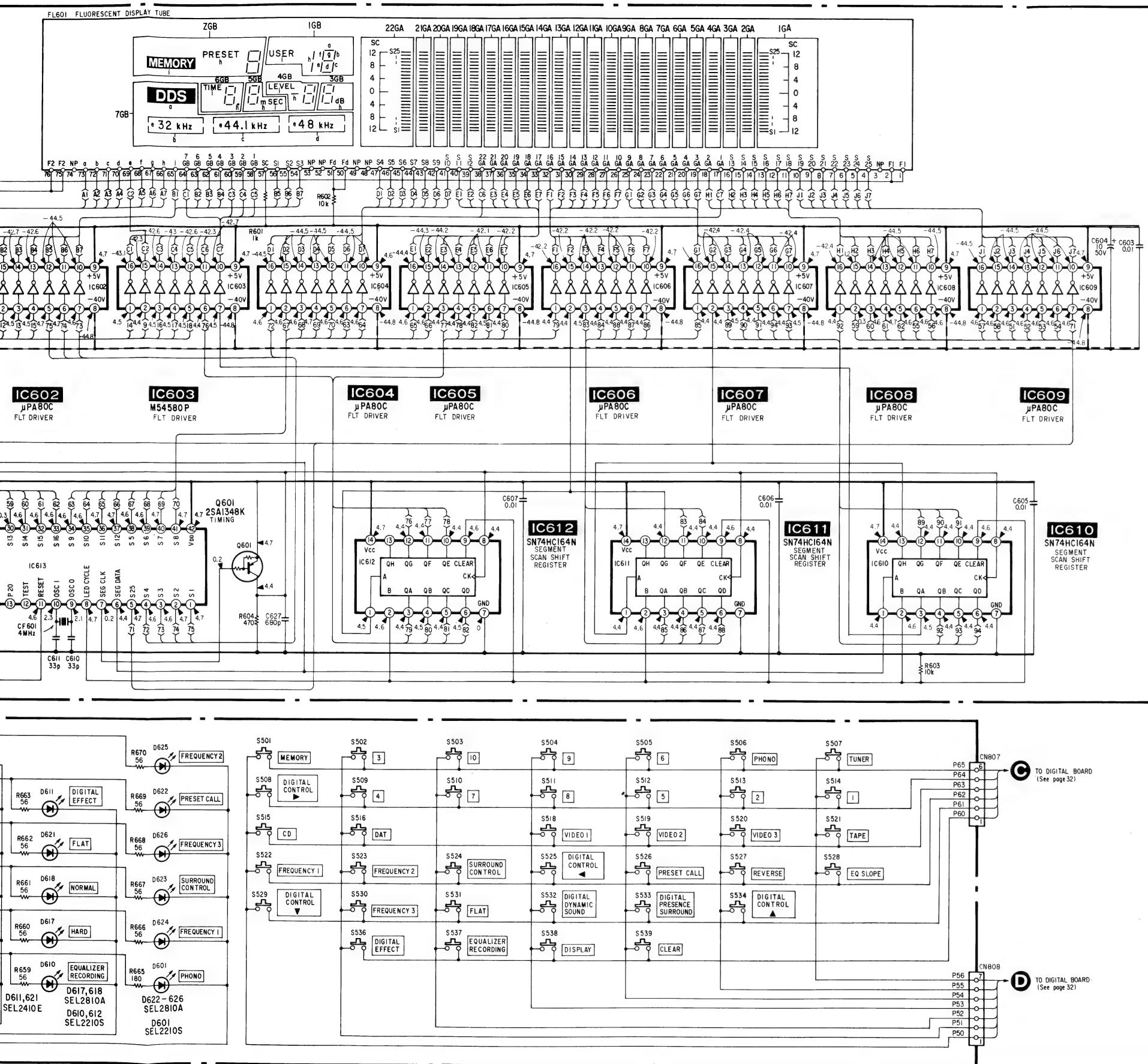


[SW BOARD]



TO DIGITAL BOARD(see page 34) TO DIGITAL BOARD(see page 34)





• Semiconductor Location

Ref. NO.	Location	Ref. No.	Location
D601	G-13	IC601	B-9
D602	G-13	IC602	B-9
D603	G-15	IC603	B-8
D604	G-16	IC604	B-7
D605	G-16	IC605	B-6
D606	G-17	IC606	B-5
D608	G-20	IC607	B-4
D609	G-21	IC608	B-3
D610	G-23	IC609	B-3
D611	H-23	IC610	C-3
D613	H-21	IC611	C-5
D614	I-21	IC612	C-6
D615	I-21	IC613	D-8
D616	I-21	IC614	G-9
D617	H-20	IC615	G-2
D618	I-20	IC616	G-4
D619	I-20	IC617	G-5
D620	I-20	IC701	I-2
D621	I-19	IC702	I-3
D622	H-18	IC703	I-4
D623	I-18	IC704	I-5
D624	H-19	IC705	I-6
D625	I-19	IC706	I-6
D626	I-19		
D701	H-2	Q601	D-6
D702	H-3	Q602	G-6
D703	H-3	Q604	I-9
D704	H-4	Q605	I-9
D705	H-4	Q606	I-10
D706	H-4	Q607	I-10
D707	H-4	Q608	I-11
D708	H-5	Q609	I-11
D709	H-5	Q610	I-7
D710	H-6	Q611	I-8
D711	H-6	Q612	I-8
D712	H-7	Q613	I-8
D713	H-2	Q614	I-9
D714	I-2		
D715	I-2		





## SECTION 4 EXPLODED VIEWS

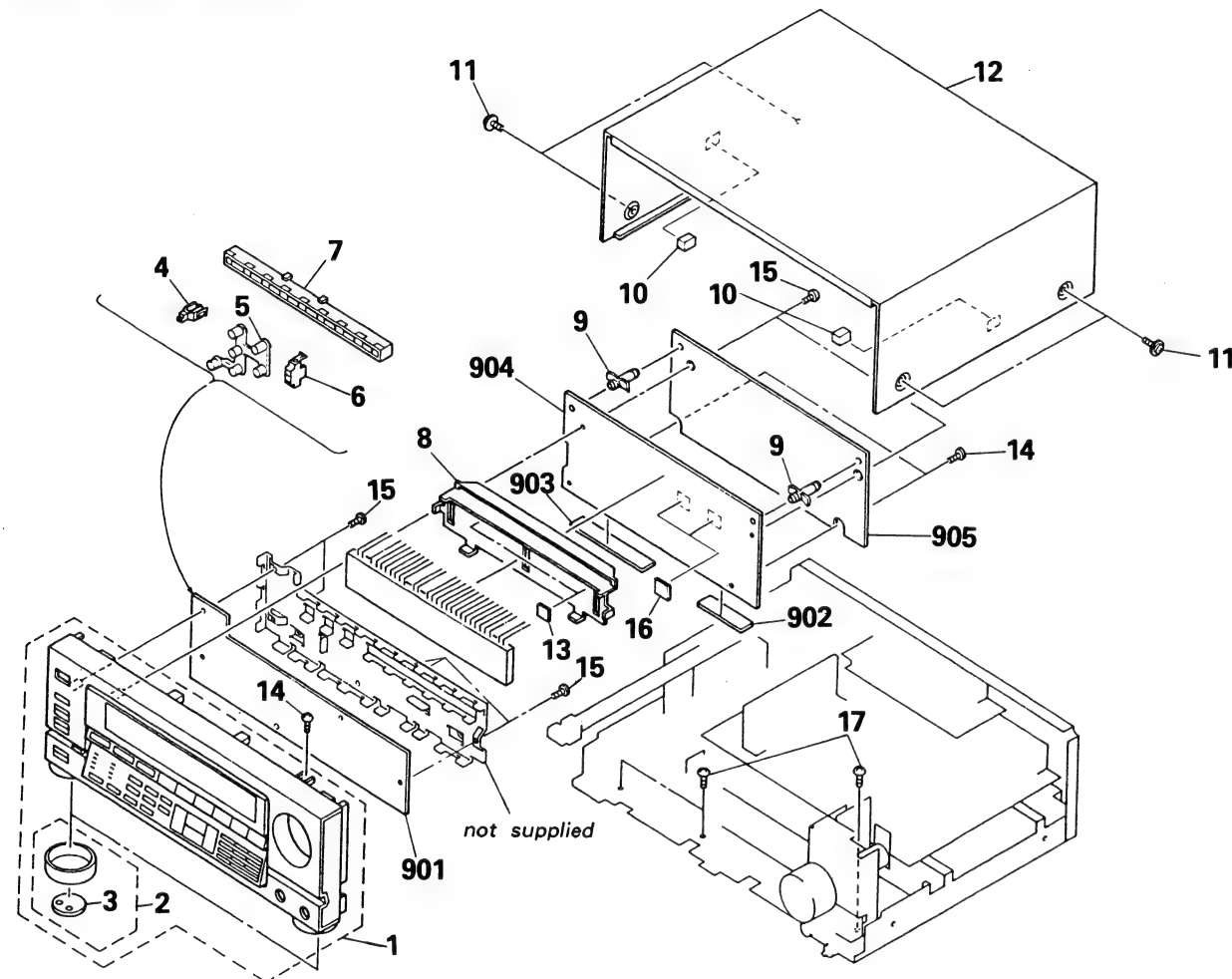
### NOTE:


- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color

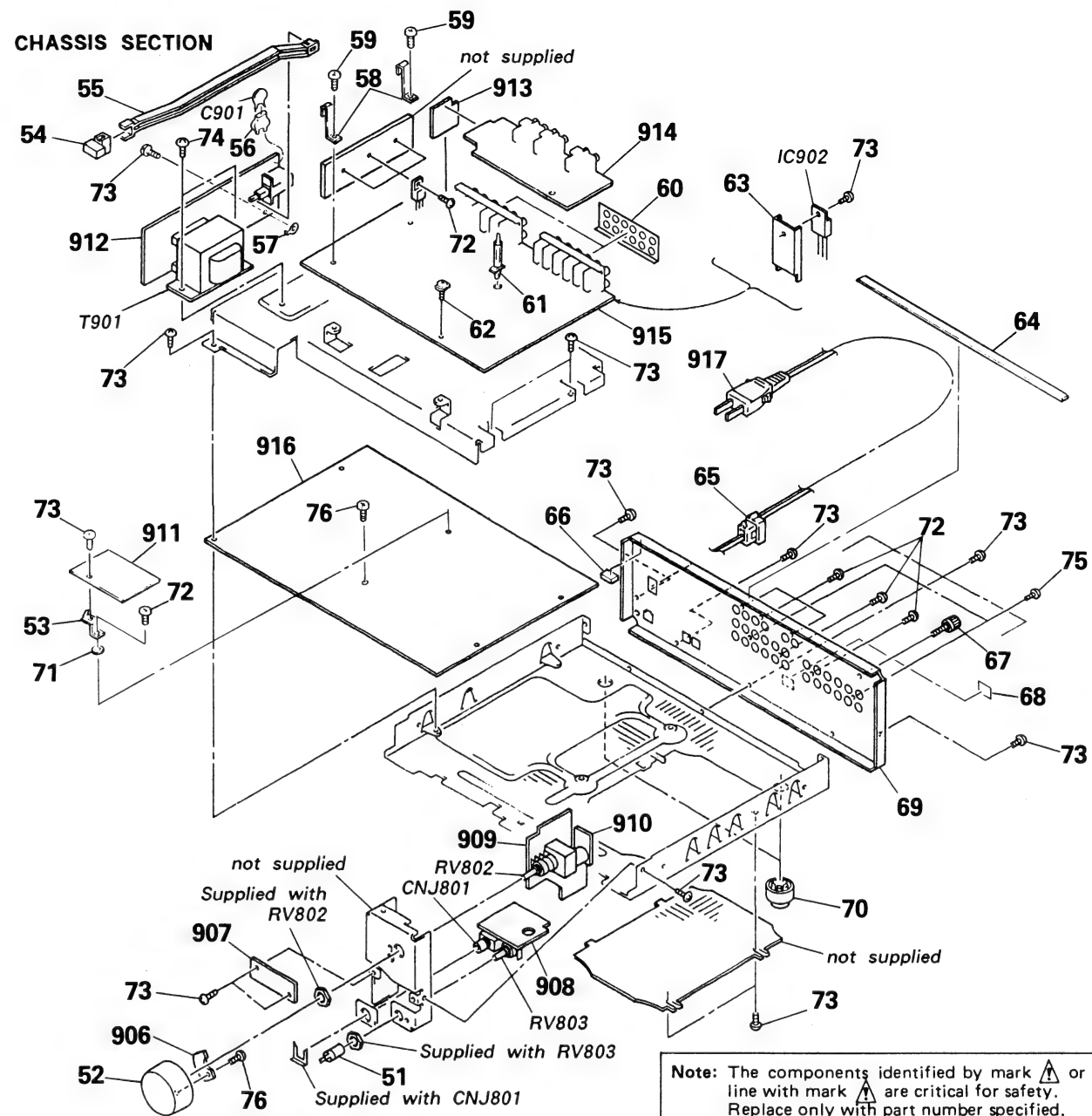
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



### 4-1 FRONT PANEL SECTION






No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-4917-275-1	PANEL (EXP) ASSY, FRONT		13	*4-921-941-01	CUSHION (FL)	
2	X-4917-252-1	PLATE (LEG) ASSY, ORNAMENTAL		14	7-682-547-04	SCREW +BVTT 3X6 (S)	
3	4-928-401-01	FELT		15	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
4	*4-928-423-01	HOLDER (B), LED		16	9-911-841-XX	CUSHION	
5	*4-928-475-01	HOLDER (6 GANG), LED		17	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
6	*4-928-422-01	HOLDER (A), LED					
7	*4-928-424-01	HOLDER (C), LED		901	*1-629-066-11	PC BOARD, SWITCH	
8	*4-928-435-01	HOLDER, FL TUBE		902	*1-629-076-11	PC BOARD, CONNECTION (A)	
9	*4-924-098-31	HOLDER, PC BOARD		903	*1-629-077-11	PC BOARD, CONNECTION (B)	
10	*4-910-502-01	CUSHION, ANTENNA		904	*1-629-074-11	PC BOARD, DISPLAY (A)	
11	3-704-366-01	SCREW (CASE) (M3X8)		905	*A-4375-430-A	MOUNTED PCB, DISPLAY (B)	
12	4-919-379-02	CASE		T901	 1-449-767-11	TRANSFORMER, POWER	

### 4-2 CHASSIS SECTION




Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	4-921-921-01	KNOB (M)		70	4-931-169-01	FOOT	
52	4-925-121-01	KNOB (V2)		71	9-836-007-39	WASHER	
53	*4-928-468-01	BRACKET (E)		72	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
54	4-921-919-01	BUTTON (P)		73	7-682-547-04	SCREW +BVTT 3X6 (S)	
55	*4-928-421-01	JOINT		74	7-682-560-04	SCREW +BVTT 4X6 (S)	
56	*4-875-455-31	COVER (DIA. 20), CAPACITOR		75	7-621-849-00	SCREW, TAPPING	
57	4-870-539-00	PLATE, GROUND		76	7-682-548-04	SCREW +BVTT 3X8 (S)	
58	*4-928-464-01	BRACKET (D)		906	*1-629-067-11	PC BOARD, LED	
59	3-704-366-01	SCREW (CASE) (M3X8)		907	*1-629-080-11	PC BOARD, BALANCE	
60	*4-928-467-01	PLATE (12P), SHIELD		908	*1-629-079-11	PC BOARD, MIC.	
61	*4-924-098-41	HOLDER, PC BOARD		909	*1-629-078-11	PC BOARD, VOL.	
62	X-4908-910-1	SCREW ASSY (+ BVTT)		910	*1-629-081-11	PC BOARD, MOTOR	
63	*3-309-144-21	HEAT SINK		911	*1-629-571-11	PC BOARD, COUNTMEASURE	
64	9-911-815-01	CUSHION		912	*1-631-441-11	PC BOARD, POWER	
65	 3-703-244-00	BUSHING (2104), CORD		913	*1-629-085-11	PC BOARD, CONNECTION	
66	*4-613-507-01	SPACER (A)		914	*1-629-084-11	PC BOARD, VIDEO	
67	3-706-165-00	SCREW		915	*A-4333-654-A	MOUNTED PCB, ANALOG	
68	*3-703-079-21	(UK)....LABEL, CAUTION (BACK)		916	*A-4333-659-A	MOUNTED PCB, DIGITAL	
69	*4-930-817-11	(AEP)....PANEL, BACK		917	 1-574-805-11	(AEP)....CORD, POWER	
	*4-930-817-21	(UK)....PANEL, BACK			 1-574-905-11	(UK)....CORD, POWER	

### NOTE:

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are such as resistors

Ref.No.	P
901	*1
902	*1
903	*1
904	*1
905	*A
906	*1
907	*1
908	*1
909	*1
910	*1
911	*1
912	*1
913	*1
914	*1
915	*A
916	*A
917	 1
C101	1
C102	1
C103	1
C104	1
C105	1
C106	1
C107	1
C108	1
C110	1
C111	1
C112	1
C113	1
C114	1
C115	1
C117	1
C118	1
C151	1
C152	1
C153	1
C154	1
C155	1
C156	1
C157	1
C158	1
C160	1
C161	1
C162	1
C163	1



## SECTION 5 ELECTRICAL PARTS LIST

### NOTE:



- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.



CAPACITORS:  
MF:  $\mu$ F, PF:  $\mu$ F.

RESISTORS  
• All resistors are in ohms.  
• F: nonflammable

COILS  
• MMH: mH, UH:  $\mu$ H

SEMICONDUCTORS  
In each case, U:  $\mu$ , for example:  
UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,  
UPC...:  $\mu$ PC, UPD...:  $\mu$ PD...

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



Ref.No.	Part No.	Description
901	*1-629-066-11	PC BOARD, SWITCH
902	*1-629-076-11	PC BOARD, CONNECTION (A)
903	*1-629-077-11	PC BOARD, CONNECTION (B)
904	*1-629-074-11	PC BOARD, DISPLAY (A)
905	*A-4375-430-A	MOUNTED PCB, DISPLAY (B)
906	*1-629-067-11	PC BOARD, LED
907	*1-629-080-11	PC BOARD, BALANCE
908	*1-629-079-11	PC BOARD, MIC.
909	*1-629-078-11	PC BOARD, VOL.
910	*1-629-081-11	PC BOARD, MOTOR
911	*1-629-571-11	PC BOARD, COUNTMEASURE
912	*1-631-441-11	PC BOARD, POWER
913	*1-629-085-11	PC BOARD, CONNECTION
914	*1-629-084-11	PC BOARD, VIDEO
915	*A-4333-654-A	MOUNTED PCB, ANALOG
916	*A-4333-659-A	MOUNTED PCB, DIGITAL
917	 1-574-805-11	(AEP)...CORD, POWER
	 1-574-905-11	(UK)...CORD, POWER
C101	1-124-925-11	ELECT 2.2MF 20% 50V
C102	1-162-282-31	CERAMIC 100PF 10% 50V
C103	1-162-219-31	CERAMIC 68PF 5% 50V
C104	1-124-477-11	ELECT 47MF 20% 16V
C105	1-130-480-00	MYLAR 0.0056MF 5% 50V
C106	1-130-473-00	MYLAR 0.0015MF 5% 50V
C107	1-124-464-11	ELECT 0.22MF 20% 50V
C108	1-124-477-11	ELECT 47MF 20% 16V
C110	1-123-875-11	ELECT 10MF 20% 50V
C111	1-162-219-31	CERAMIC 68PF 5% 50V
C112	1-124-925-11	ELECT 2.2MF 20% 50V
C113	1-124-477-11	ELECT 47MF 20% 16V
C114	1-161-494-00	CERAMIC 0.022MF 25V
C115	1-161-494-00	CERAMIC 0.022MF 25V
C117	1-161-494-00	CERAMIC 0.022MF 25V
C118	1-161-494-00	CERAMIC 0.022MF 25V
C151	1-124-925-11	ELECT 2.2MF 20% 50V
C152	1-162-282-31	CERAMIC 100PF 10% 50V
C153	1-162-219-31	CERAMIC 68PF 5% 50V
C154	1-124-477-11	ELECT 47MF 20% 16V
C155	1-130-480-00	MYLAR 0.0056MF 5% 50V
C156	1-130-473-00	MYLAR 0.0015MF 5% 50V
C157	1-124-464-11	ELECT 0.22MF 20% 50V
C158	1-124-477-11	ELECT 47MF 20% 16V
C160	1-123-875-11	ELECT 10MF 20% 50V
C161	1-162-219-31	CERAMIC 68PF 5% 50V
C162	1-124-925-11	ELECT 2.2MF 20% 50V
C163	1-124-477-11	ELECT 47MF 20% 16V

Ref.No.	Part No.	Description
C164	1-161-494-00	CERAMIC 0.022MF 25V
C165	1-161-494-00	CERAMIC 0.022MF 25V
C201	1-123-875-11	ELECT 10MF 20% 50V
C202	1-123-875-11	ELECT 10MF 20% 50V
C203	1-123-875-11	ELECT 10MF 20% 50V
C204	1-123-875-11	ELECT 10MF 20% 50V
C205	1-124-473-11	ELECT 1000MF 20% 10V
C206	1-124-473-11	ELECT 1000MF 20% 10V
C207	1-123-875-11	ELECT 10MF 20% 50V
C208	1-123-875-11	ELECT 10MF 20% 50V
C209	1-124-477-11	ELECT 47MF 20% 16V
C210	1-124-477-11	ELECT 47MF 20% 16V
C211	1-123-875-11	ELECT 10MF 20% 50V
C212	1-161-494-00	CERAMIC 0.022MF 25V
C304	1-164-095-11	CERAMIC 0.01MF 10% 16V
C305	1-126-233-11	ELECT 22MF 20% 25V
C306	1-164-095-11	CERAMIC 0.01MF 10% 16V
C307	1-126-233-11	ELECT 22MF 20% 25V
C309	1-126-233-11	ELECT 22MF 20% 25V
C310	1-161-494-00	CERAMIC 0.022MF 25V
C311	1-102-959-00	CERAMIC 22PF 5% 50V
C312	1-102-959-00	CERAMIC 22PF 5% 50V
C313	1-102-947-00	CERAMIC 10PF 0.5PF 50V
C314	1-136-165-00	FILM 0.1MF 5% 50V
C315	1-126-233-11	ELECT 22MF 20% 25V
C316	1-161-379-00	CERAMIC 0.01MF 20% 16V
C317	1-162-199-31	CERAMIC 10PF 5% 50V
C318	1-161-379-00	CERAMIC 0.01MF 20% 16V
C319	1-161-379-00	CERAMIC 0.01MF 20% 16V
C320	1-161-494-00	CERAMIC 0.022MF 25V
C321	1-161-494-00	CERAMIC 0.022MF 25V
C322	1-162-294-31	CERAMIC 0.001MF 10% 50V
C323	1-161-494-00	CERAMIC 0.022MF 25V
C324	1-124-477-11	ELECT 47MF 20% 16V
C325	1-124-477-11	ELECT 47MF 20% 16V
C331	1-162-294-31	CERAMIC 0.001MF 10% 50V
C401	1-162-215-31	CERAMIC 47PF 5% 50V
C402	1-126-233-11	ELECT 22MF 20% 25V
C403	1-126-233-11	ELECT 22MF 20% 25V
C405	1-126-233-11	ELECT 22MF 20% 25V
C406	1-126-233-11	ELECT 22MF 20% 25V
C407	1-123-875-11	ELECT 10MF 20% 50V
C408	1-130-476-00	MYLAR 0.0027MF 5% 50V
C409	1-102-114-00	CERAMIC 470PF 10% 50V
C410	1-126-233-11	ELECT 22MF 20% 25V
C411	1-130-482-00	MYLAR 0.0082MF 5% 50V

Ref.No.	Part No.	Description
C412	1-126-233-11	ELECT 22MF 20% 25V
C413	1-106-343-00	MYLAR 0.001MF 5% 50V
C414	1-126-233-11	ELECT 22MF 20% 25V
C416	1-123-330-00	ELECT 22MF 20% 25V
C417	1-126-233-11	ELECT 22MF 20% 25V
C418	1-123-330-00	ELECT 22MF 20% 25V
C419	1-161-494-00	CERAMIC 0.022MF 25V
C420	1-126-059-11	ELECT 10MF 20% 50V
C421	1-126-059-11	ELECT 10MF 20% 50V
C422	1-126-059-11	ELECT 10MF 20% 50V
C423	1-126-059-11	ELECT 10MF 20% 50V
C424	1-123-330-00	ELECT 22MF 20% 25V
C425	1-123-330-00	ELECT 22MF 20% 25V
C426	1-161-494-00	CERAMIC 0.022MF 25V
C427	1-130-467-00	MYLAR 470PF 5% 50V
C428	1-123-330-00	ELECT 22MF 20% 25V
C430	1-126-233-11	ELECT 22MF 20% 25V
C432	1-102-963-00	CERAMIC 33PF 5% 50V
C433	1-102-963-00	CERAMIC 33PF 5% 50V
C435	1-161-494-00	CERAMIC 0.022MF 25V
C436	1-161-494-00	CERAMIC 0.022MF 25V
C438	1-161-494-00	CERAMIC 0.022MF 25V
C440	1-161-494-00	CERAMIC 0.022MF 25V
C441	1-126-233-11	ELECT 22MF 20% 25V
C442	1-126-233-11	ELECT 22MF 20% 25V
C443	1-161-494-00	CERAMIC 0.022MF 25V
C444	1-161-494-00	CERAMIC 0.022MF 25V
C445	1-161-494-00	CERAMIC 0.022MF 25V
C446	1-124-477-11	ELECT 47MF 20% 16V
C447	1-124-477-11	ELECT 47MF 20% 16V
C452	1-126-233-11	ELECT 22MF 20% 25V
C453	1-126-233-11	ELECT 22MF 20% 25V
C455	1-126-233-11	ELECT 22MF 20% 25V
C456	1-126-233-11	ELECT 22MF 20% 25V
C457	1-123-875-11	ELECT 10MF 20% 50V
C458	1-130-476-00	MYLAR 0.0027MF 5% 50V
C459	1-102-114-00	CERAMIC 470PF 10% 50V
C460	1-126-233-11	ELECT 22MF 20% 25V
C461	1-130-482-00	MYLAR 0.0082MF 5% 50V
C462	1-126-233-11	ELECT 22MF 20% 25V
C463	1-106-343-00	MYLAR 0.001MF 5% 50V
C464	1-126-233-11	ELECT 22MF 20% 25V
C466	1-123-330-00	ELECT 22MF 20% 25V
C467	1-126-233-11	ELECT 22MF 20% 25V
C468	1-123-330-00	ELECT 22MF 20% 25V
C469	1-101-005-00	CERAMIC 0.022MF 50V
C470	1-126-059-11	ELECT 10MF 20% 50V
C471	1-126-059-11	ELECT 10MF 20% 50V
C472	1-126-059-11	ELECT 10MF 20% 50V
C473	1-126-059-11	ELECT 10MF 20% 50V
C474	1-123-330-00	ELECT 22MF 20% 25V
C475	1-123-330-00	ELECT 22MF 20% 25V
C476	1-161-494-00	CERAMIC 0.022MF 25V
C477	1-130-467-00	MYLAR 470PF 5% 50V
C478	1-123-330-00	ELECT 22MF 20% 25V
C482	1-161-494-00	CERAMIC 0.022MF 25V
C483	1-123-875-11	ELECT 10MF 20% 50V
C484	1-126-233-11	ELECT 22MF 20% 25V

Ref.No.	Part No.	Description
C485	1-161-494-00	CERAMIC 0.022MF 25V
C486	1-161-494-00	CERAMIC 0.022MF 25V
C487	1-161-494-00	CERAMIC 0.022MF 25V
C488	1-161-494-00	CERAMIC 0.022MF 25V
C489	1-126-233-11	ELECT 22MF 20% 25V
C491	1-136-165-00	FILM 0.1MF 5% 50V
C492	1-136-165-00	FILM 0.1MF 5% 50V
C493	1-136-165-00	FILM 0.1MF 5% 50V
C494	1-136-165-00	FILM 0.1MF 5% 50V
C495	1-136-165-00	FILM 0.1MF 5% 50V
C496	1-136-165-00	FILM 0.1MF 5% 50V
C497	1-136-165-00	FILM 0.1MF 5% 50V
C498	1-164-095-11	CERAMIC 0.01MF 10% 16V
C499	1-102-963-00	CERAMIC 33PF 5% 50V
C502	1-102-963-00	CERAMIC 33PF 5% 50V
C503	1-102-963-00	CERAMIC 33PF 5% 50V
C504	1-161-494-00	CERAMIC 0.022MF 25V
C505	1-126-233-11	ELECT 22MF 20% 25V
C506	1-126-233-11	ELECT 22MF 20% 25V
C507	1-124-927-11	ELECT 4.7MF 20% 50V
C508	1-123-875-11	ELECT 10MF 20% 50V
C509	1-124-499-11	ELECT 1MF 20% 50V
C510	1-124-499-11	ELECT 1MF 20% 50V
C511	1-161-494-00	CERAMIC 0.022MF 25V
C512	1-126-233-11	ELECT 22MF 20% 25V
C513	1-161-494-00	CERAMIC 0.022MF 25V
C514	1-126-233-11	ELECT 22MF 20% 25V
C515	1-161-494-00	CERAMIC 0.022MF 25V
C516	1-126-233-11	ELECT 22MF 20% 25V
C517	1-125-447-11	DOUBLE LAYERS 1F 5.5V
C601	1-123-875-11	ELECT 10MF 20% 50V
C602	1-136-153-00	FILM 0.01MF 5% 50V
C603	1-136-153-00	FILM 0.01MF 5% 50V
C604	1-123-875-11	ELECT 10MF 20% 50V
C605	1-161-379-00	CERAMIC 0.01MF 30% 16V
C606	1-161-379-00	CERAMIC 0.01MF 30% 16V
C607	1-161-379-00	CERAMIC 0.01MF 30% 16V
C608	1-124-443-00	ELECT 100MF 20% 6.3V
C609	1-161-379-00	CERAMIC 0.01MF 30% 16V
C610	1-102-963-00	CERAMIC 33PF 5% 50V
C611	1-102-963-00	CERAMIC 33PF 5% 50V
C612	1-124-443-00	ELECT 100MF 20% 6.3V
C613	1-161-379-00	CERAMIC 0.01MF 30% 16V
C614	1-102-963-00	CERAMIC 33PF 5% 50V
C615	1-102-963-00	CERAMIC 33PF 5% 50V
C616	1-162-294-31	CERAMIC 0.001MF 10% 50V
C617	1-162-294-31	CERAMIC 0.001MF 10% 50V
C618	1-162-294-31	CERAMIC 0.001MF 10% 50V
C619	1-162-294-31	CERAMIC 0.001MF 10% 50V
C620	1-162-294-31	CERAMIC 0.001MF 10% 50V
C621	1-162-294-31	CERAMIC 0.001MF 10% 50V
C622	1-162-294-31	CERAMIC 0.001MF 10% 50V
C623	1-161-379-00	CERAMIC 0.01MF 30% 16V
C624	1-161-379-00	CERAMIC 0.01MF 30% 16V
C625	1-161-379-00	CERAMIC 0.01MF 30% 16V
C626	1-124-477-11	ELECT 47MF 20% 16V
C627	1-162-292-31	CERAMIC 680PF 10% 50V
C628	1-161-379-00	CERAMIC 0.01MF 30% 16V

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
C629	1-161-379-00	CERAMIC	0.01MF	30%	16V		C832	1-124-925-11	ELECT	2.2MF	20%	50V	
C630	1-136-153-00	FILM	0.01MF	5%	50V		C833	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C631	1-124-443-00	ELECT	100MF	20%	6.3V		C834	1-162-219-31	CERAMIC	68PF	5%	50V	
C701	1-124-925-11	ELECT	2.2MF	20%	50V		C835	1-162-284-31	CERAMIC	150PF	10%	50V	
C702	1-162-219-31	CERAMIC	68PF	5%	50V		C836	1-124-464-11	ELECT	0.22MF	20%	50V	
C703	1-126-233-11	ELECT	22MF	20%	50V		C837	1-124-477-11	ELECT	47MF	20%	16V	
C704	1-136-162-00	FILM	0.056MF	5%	50V		C841	1-136-165-00	FILM	0.1MF	5%	50V	
C705	1-136-162-00	FILM	0.056MF	5%	50V		C854	1-123-332-00	ELECT	47MF	20%	16V	
C706	1-162-219-31	CERAMIC	68PF	5%	50V		C855	1-126-059-11	ELECT	10MF	20%	50V	
C707	1-126-233-11	ELECT	22MF	20%	50V		C857	1-126-059-11	ELECT	10MF	20%	50V	
C708	1-124-925-11	ELECT	2.2MF	20%	50V		C862	1-126-059-11	ELECT	10MF	20%	50V	
C709	1-136-159-00	FILM	0.033MF	5%	50V		C887	1-124-477-11	ELECT	47MF	20%	16V	
C710	1-136-159-00	FILM	0.033MF	5%	50V		C901	△1-161-744-00	CERAMIC	0.01MF		400V	
C711	1-162-219-31	CERAMIC	68PF	5%	50V		C902	△1-161-744-00	CERAMIC	0.01MF		400V	
C712	1-124-925-11	ELECT	2.2MF	20%	50V		C903	△1-161-741-00	CERAMIC	0.001MF	10%	400V	
C713	1-136-159-00	FILM	0.033MF	5%	50V		C904	△1-161-741-00	CERAMIC	0.001MF	10%	400V	
C714	1-136-159-00	FILM	0.033MF	5%	50V		C905	1-102-394-11	CERAMIC	0.01MF		250V	
C715	1-162-219-31	CERAMIC	68PF	5%	50V		C906	1-161-744-00	CERAMIC	0.01MF		250V	
C716	1-124-925-11	ELECT	2.2MF	20%	50V		C907	1-161-744-00	CERAMIC	0.01MF		250V	
C717	1-136-157-00	FILM	0.022MF	5%	50V		C908	1-124-563-11	ELECT	2200MF	20%	25V	
C718	1-136-157-00	FILM	0.022MF	5%	50V		C909	1-124-563-11	ELECT	2200MF	20%	25V	
C719	1-162-219-31	CERAMIC	68PF	5%	50V		C910	1-124-887-00	ELECT	3300MF	20%	16V	
C720	1-124-925-11	ELECT	2.2MF	20%	50V		C911	1-124-919-11	ELECT	220MF	20%	63V	
C721	1-136-154-00	FILM	0.012MF	5%	50V		C912	1-124-471-00	ELECT	1000MF	20%	6.3V	
C722	1-136-154-00	FILM	0.012MF	5%	50V		C913	1-124-360-00	ELECT	1000MF	20%	16V	
C723	1-162-219-31	CERAMIC	68PF	5%	50V		C914	1-124-471-00	ELECT	1000MF	20%	6.3V	
C724	1-124-925-11	ELECT	2.2MF	20%	50V		C915	1-124-360-00	ELECT	1000MF	20%	16V	
C725	1-130-480-00	MYLAR	0.0056MF	5%	50V		C916	1-124-472-11	ELECT	470MF	20%	6.3V	
C726	1-130-480-00	MYLAR	0.0056MF	5%	50V		C917	1-123-875-11	ELECT	10MF	20%	50V	
C727	1-162-219-31	CERAMIC	68PF	5%	50V		C918	1-126-233-11	ELECT	22MF	20%	50V	
C728	1-124-925-11	ELECT	2.2MF	20%	50V		C919	1-126-176-11	ELECT	220MF	20%	6.3V	
C729	1-130-477-00	MYLAR	0.0033MF	5%	50V		C920	1-124-120-11	ELECT	220MF	20%	25V	
C730	1-130-477-00	MYLAR	0.0033MF	5%	50V		C923	△1-161-741-00	CERAMIC	0.001MF	10%	400V	
C731	1-162-219-31	CERAMIC	68PF	5%	50V		C924	△1-161-741-00	CERAMIC	0.001MF	10%	400V	
C732	1-124-925-11	ELECT	2.2MF	20%	50V		C1001	1-124-465-00	ELECT	0.47MF	20%	50V	
C733	1-130-477-00	MYLAR	0.0033MF	5%	50V		C1002	1-126-233-11	ELECT	22MF	20%	25V	
C734	1-130-477-00	MYLAR	0.0033MF	5%	50V		CF501	1-567-132-00	VIBLATOR, CERAMIC				
C735	1-162-219-31	CERAMIC	68PF	5%	50V		CF601	1-567-192-11	OSCILLATOR, CERAMIC				
C736	1-124-925-11	ELECT	2.2MF	20%	50V		CF602	1-567-797-11	VIBRATOR, CERAMIC				
C737	1-130-475-00	MYLAR	0.0022MF	5%	50V		CN006	*1-560-060-00	PIN, CONNECTOR 2P				
C738	1-130-475-00	MYLAR	0.0022MF	5%	50V		CN201	*1-564-506-11	PLUG, CONNECTOR 3P				
C739	1-162-219-31	CERAMIC	68PF	5%	50V		CN202	*1-564-506-11	PLUG, CONNECTOR 3P				
C740	1-124-925-11	ELECT	2.2MF	20%	50V		CN203	*1-564-506-11	PLUG, CONNECTOR 3P				
C741	1-130-473-00	MYLAR	0.0015MF	5%	50V		CN205	*1-564-508-11	PLUG, CONNECTOR 5P				
C742	1-130-473-00	MYLAR	0.0015MF	5%	50V		CN702	*1-564-339-61	PIN, CONNECTOR 5P				
C743	1-162-219-31	CERAMIC	68PF	5%	50V		CN703	*1-564-508-11	PLUG, CONNECTOR 5P				
C744	1-124-925-11	ELECT	2.2MF	20%	50V		CN704	*1-564-339-00	PIN, CONNECTOR 5P				
C745	1-130-471-00	MYLAR	0.001MF	5%	50V		CN705	*1-564-507-11	PLUG, CONNECTOR 4P				
C746	1-130-471-00	MYLAR	0.001MF	5%	50V		CN706	*1-564-505-11	PLUG, CONNECTOR 2P				
C747	1-162-219-31	CERAMIC	68PF	5%	50V		CN801	*1-564-508-11	PLUG, CONNECTOR 5P				
C748	1-124-925-11	ELECT	2.2MF	20%	50V		CN802	*1-564-339-81	PIN, CONNECTOR 5P				
C749	1-124-925-11	ELECT	2.2MF	20%	50V		CN803	*1-564-341-11	PIN, CONNECTOR 7P				
C804	1-123-332-00	ELECT	47MF	20%	16V		CN804	*1-564-338-00	PIN, CONNECTOR 4P				
C805	1-126-059-11	ELECT	10MF	20%	50V		CN805	*1-564-339-61	PIN, CONNECTOR 5P				
C807	1-126-059-11	ELECT	10MF	20%	50V		CN806	*1-564-340-00	PIN, CONNECTOR 6P				
C812	1-126-059-11	ELECT	10MF	20%	50V		CN807	*1-564-340-71	PIN, CONNECTOR 6P				
C831	1-136-165-00	FILM	0.1MF	5%	50V		CN808	*1-564-341-71	PIN, CONNECTOR 7P				

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
---------	----------	-------------

CN809	*1-564-337-00	PIN, CONNECTOR 3P
CN810	*1-564-339-71	PIN, CONNECTOR 5P
CN901	*1-564-321-00	PIN, CONNECTOR 2P
CN1001	*1-564-507-11	PLUG, CONNECTOR 4P
CNJ002	*1-562-368-11	CONNECTOR, BOARD TO BOARD 8P
CNJ101	1-565-320-11	JACK, PIN 6P (PHONO/TUNER IN, TAPE OUT)
CNJ102	1-565-258-11	JACK, PIN 4P (TAPE IN, DAT OUT)
CNJ103	1-565-320-11	JACK, PIN 6P (VIDEO, DAT IN/OUT)
CNJ104	1-565-320-11	JACK, PIN 6P (VIDEO 1 IN, LINE/MONITOR OUT)
CNJ201	1-565-319-11	JACK, PIN 2P (VIDEO 1 IN, LINE/MONITOR OUT)
CNJ202	1-565-319-11	JACK, PIN 2P (VIDEO 1 OUT, VIDEO 2 IN)
CNJ203	1-565-406-11	JACK, PIN 1P (VIDEO 3/CD IN)
CNJ404	*1-562-516-11	CONNECTOR, BOARD TO BOARD 5P
CNJ501	*1-565-561-11	PIN, CONNECTOR 3P
CNJ801	1-563-347-11	JACK
CNP001	*1-564-344-11	CONNECTOR, BOARD TO BOARD 8P
CNP003	*1-564-529-11	CONNECTOR, BOARD TO BOARD 5P
D101	8-719-912-20	DIODE 1SS120
D301	8-719-912-20	DIODE 1SS120
D302	8-719-912-20	DIODE 1SS120
D401	8-719-912-20	DIODE 1SS120
D402	8-719-912-20	DIODE 1SS120
D451	8-719-912-20	DIODE 1SS120
D452	8-719-912-20	DIODE 1SS120
D501	8-719-912-20	DIODE 1SS120
D502	8-719-912-20	DIODE 1SS120
D503	8-719-200-77	DIODE 1OE2N
D505	8-719-912-20	DIODE 1SS120
D506	8-719-912-20	DIODE 1SS120
D507	8-719-912-20	DIODE 1SS120
D508	8-719-912-20	DIODE 1SS120
D509	8-719-912-20	DIODE 1SS120
D510	8-719-912-20	DIODE 1SS120
D511	8-719-912-20	DIODE 1SS120
D512	8-719-912-20	DIODE 1SS120
D514	8-719-912-20	DIODE 1SS120
D515	8-719-912-20	DIODE 1SS120
D516	8-719-912-20	DIODE 1SS120
D517	8-719-000-63	DIODE UZL-6M3
D520	8-719-912-20	DIODE 1SS120
D601	8-719-301-39	DIODE SEL2210S-D
D602	8-719-301-39	DIODE SEL2210S-D
D603	8-719-301-39	DIODE SEL2210S-D
D604	8-719-974-93	DIODE GL-9ED2
D605	8-719-974-93	DIODE GL-9ED2
D606	8-719-974-93	DIODE GL-9ED2
D608	8-719-301-39	DIODE SEL2210S-D
D609	8-719-301-39	DIODE SEL2210S-D
D610	8-719-301-39	DIODE SEL2210S-D
D611	8-719-301-43	DIODE SEL2410E-C
D613	8-719-301-52	DIODE SEL2810A-C
D614	8-719-301-52	DIODE SEL2810A-C
D615	8-719-301-52	DIODE SEL2810A-C
D616	8-719-301-43	DIODE SEL2410E-C
D617	8-719-301-52	DIODE SEL2810A-C
D618	8-719-301-52	DIODE SEL2810A-C
D619	8-719-301-52	DIODE SEL2810A-C

Ref.No.	Part No.	Description
---------	----------	-------------

D620	8-719-301-43	DIODE SEL2410E-C
D621	8-719-301-43	DIODE SEL2410E-C
D622	8-719-301-52	DIODE SEL2810A-C
D623	8-719-301-52	DIODE SEL2810A-C
D624	8-719-301-52	DIODE SEL2810A-C
D625	8-719-301-52	DIODE SEL2810A-C
D626	8-719-301-52	DIODE SEL2810A-C
D627	8-719-969-90	DIODE SLP3070K
D701	8-719-912-20	DIODE 1SS120
D702	8-719-912-20	DIODE 1SS120
D703	8-719-912-20	DIODE 1SS120
D704	8-719-912-20	DIODE 1SS120
D705	8-719-912-20	DIODE 1SS120
D706	8-719-912-20	DIODE 1SS120
D707	8-719-912-20	DIODE 1SS120
D708	8-719-912-20	DIODE 1SS120
D709	8-719-912-20	DIODE 1SS120
D710	8-719-912-20	DIODE 1SS120
D711	8-719-912-20	DIODE 1SS120
D712	8-719-912-20	DIODE 1SS120
D713	8-719-000-63	DIODE UZL-6M3
D714	8-719-912-20	DIODE 1SS120
D715	8-719-912-20	DIODE 1SS120
D901	8-719-200-77	DIODE 1OE2N
D902	8-719-200-77	DIODE 1OE2N
D903	8-719-200-77	DIODE 1OE2N
D904	8-719-200-77	DIODE 1OE2N
D905	8-719-200-77	DIODE 1OE2N
D906	8-719-200-77	DIODE 1OE2N
D907	8-719-200-77	DIODE 1OE2N
D908	8-719-200-77	DIODE 1OE2N
D909	8-719-200-77	DIODE 1OE2N
D910	8-719-200-77	DIODE 1OE2N
D911	8-719-200-77	DIODE 1OE2N
D912	8-719-200-77	DIODE 1OE2N
D913	8-719-200-77	DIODE 1OE2N
D914	8-719-200-77	DIODE 1OE2N
D915	8-719-110-58	DIODE RD22ES-B3
D916	8-719-160-43	DIODE RD9.1F-B2
D917	8-719-200-77	DIODE 1OE2N
D918	8-719-110-58	DIODE RD22ES-B3
D919	8-719-200-77	DIODE 1OE2N
D920	8-719-200-77	DIODE 1OE2N
D921	8-719-200-77	DIODE 1OE2N
D922	8-719-933-33	DIODE HZS6A1L
FL601	1-519-492-11	INDICATOR TUBE, FLUORESCENT
IC101	8-759-600-02	IC M5218L
IC102	8-759-601-02	IC M5218P
IC103	8-759-805-13	IC LC7821
IC104	8-759-805-13	IC LC7821
IC201	8-759-208-08	IC TC4052BPHB
IC301	8-752-329-95	IC CXD1243P
IC303	8-759-202-93	IC TC74HC153P
IC304	8-759-600-02	IC M5218L
IC401	8-759-601-02	IC M5218P

Ref.No.	Part No.	Description
IC402	8-759-601-02	IC M5218P
IC403	8-759-202-13	IC SN74HC04P
IC404	8-759-982-96	IC AK9201-VP
IC405	8-752-331-87	IC CXD1160AP
IC406	8-752-331-87	IC CXD1160AP
IC407	8-759-973-04	IC MSM41464-10RS-K
IC408	8-759-979-94	IC CXD1355Q
IC410	8-759-979-09	IC PCM58P
IC411	8-759-710-73	IC NJM4580L
IC412	8-752-328-72	IC CXD2550P
IC413	8-759-805-35	IC CXD1161P-2
IC414	8-759-601-02	IC M5218P
IC415	8-759-601-02	IC M5218P
IC416	8-759-202-11	IC TC74HC00P
IC417	8-759-203-01	IC TC74HC175P
IC418	8-759-202-32	IC TC74HC163P
IC419	8-759-202-32	IC TC74HC163P
IC420	8-759-908-15	IC TL431CLPB
IC460	8-759-979-09	IC PCM58P
IC461	8-759-710-73	IC NJM4580L
IC501	8-759-321-11	IC HD63B01Y0
IC502	8-759-202-14	IC TC74HC08P
IC503	8-759-600-02	IC M5218L
IC601	1-807-133-11	IC UPA80C
IC602	1-807-133-11	IC UPA80C
IC603	1-759-631-82	IC M54580P
IC604	1-807-133-11	IC UPA80C
IC605	1-807-133-11	IC UPA80C
IC606	1-807-133-11	IC UPA80C
IC607	1-807-133-11	IC UPA80C
IC608	1-807-133-11	IC UPA80C
IC609	1-807-133-11	IC UPA80C
IC610	8-759-001-39	IC MC74HC164N
IC611	8-759-001-39	IC MC74HC164N
IC612	8-759-001-39	IC MC74HC164N
IC613	8-759-979-99	IC MSM6404-246
IC614	8-759-143-53	IC UPD78C11CW-648
IC615	8-759-800-37	IC LC4066BH
IC616	8-759-800-37	IC LC4066BH
IC617	8-759-800-37	IC LC4066BH
IC701	8-759-600-02	IC M5218L
IC702	8-759-600-02	IC M5218L
IC703	8-759-600-02	IC M5218L
IC704	8-759-600-02	IC M5218L
IC705	8-759-600-02	IC M5218L
IC706	8-759-600-02	IC M5218L
IC801	8-759-710-73	IC NJM4580L
IC802	8-759-710-73	IC NJM4580L
IC803	8-759-601-02	IC M5218P
IC804	8-759-820-62	IC LB1639
IC901	8-759-604-33	IC M5F7812
IC902	8-759-604-29	IC M5F7805
IC903	8-759-604-47	IC M5F7905
IC904	8-759-604-51	IC M5F7912
IC905	8-759-604-29	IC M5F7805
IC1001	8-759-202-86	IC TC74HC123P

Ref.No.	Part No.	Description
L201	1-408-080-00	INDUCTOR 100UH
L202	1-408-080-00	INDUCTOR 100UH
L301	1-410-517-11	INDUCTOR 47UH
L302	1-410-517-11	INDUCTOR 47UH
L307	1-410-517-11	INDUCTOR 47UH
L401	1-410-324-11	INDUCTOR 4.7UH
L901	△1-424-117-11	FILTER, LINE
LPF401	1-464-869-11	FILTER UNIT, LOW PASS
LPF451	1-464-869-11	FILTER UNIT, LOW PASS
Q102	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q103	8-729-806-28	TRANSISTOR 2SC3402
Q201	8-729-806-28	TRANSISTOR 2SC3402
Q202	8-729-806-28	TRANSISTOR 2SC3402
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q204	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q207	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q302	8-729-900-89	TRANSISTOR DTC144ES
Q401	8-729-100-13	TRANSISTOR 2SC2001
Q402	8-729-107-77	TRANSISTOR 2SC3623-L
Q403	8-729-107-77	TRANSISTOR 2SC3623-L
Q404	8-729-900-63	TRANSISTOR DTA124ES
Q405	8-729-900-63	TRANSISTOR DTA124ES
Q406	8-729-900-63	TRANSISTOR DTA124ES
Q451	8-729-100-13	TRANSISTOR 2SC2001
Q452	8-729-107-77	TRANSISTOR 2SC3623-L
Q453	8-729-107-77	TRANSISTOR 2SC3623-L
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q502	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q504	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q506	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q601	8-729-806-10	TRANSISTOR 2SA1348
Q602	8-729-806-28	TRANSISTOR 2SC3402
Q604	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q605	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q606	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q607	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q608	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q609	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q610	8-729-177-32	TRANSISTOR 2SD773
Q611	8-729-177-32	TRANSISTOR 2SD773
Q612	8-729-177-32	TRANSISTOR 2SD773
Q613	8-729-177-32	TRANSISTOR 2SD773
Q614	8-729-177-32	TRANSISTOR 2SD773
Q801	8-729-107-98	TRANSISTOR 2SC3622A-L
Q802	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q851	8-729-107-98	TRANSISTOR 2SC3622A-L
Q901	8-729-920-91	TRANSISTOR 2SB1187-F
Q902	8-729-140-96	TRANSISTOR 2SD774
R101	1-249-441-11	CARBON 100K 5% 1/4W
R102	1-249-417-11	CARBON 1K 5% 1/4W
R103	1-249-441-11	CARBON 100K 5% 1/4W

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
---------	----------	-------------

R104	1-249-416-11	CARBON	820	5%	1/4W
R105	1-247-897-11	CARBON	560K	5%	1/4W
R106	1-249-437-11	CARBON	47K	5%	1/4W
R107	1-249-441-11	CARBON	100K	5%	1/4W
R108	1-249-409-11	CARBON	220	5%	1/4W
R109	1-249-409-11	CARBON	220	5%	1/4W
R110	1-247-897-11	CARBON	560K	5%	1/4W
R111	1-247-897-11	CARBON	560K	5%	1/4W
R112	1-247-897-11	CARBON	560K	5%	1/4W
R113	1-247-897-11	CARBON	560K	5%	1/4W
R114	1-247-897-11	CARBON	560K	5%	1/4W
R115	1-249-417-11	CARBON	1K	5%	1/4W
R116	1-249-417-11	CARBON	1K	5%	1/4W
R117	1-249-417-11	CARBON	1K	5%	1/4W
R118	1-249-417-11	CARBON	1K	5%	1/4W
R119	1-249-417-11	CARBON	1K	5%	1/4W
R120	1-249-413-11	CARBON	470	5%	1/4W
R121	1-249-413-11	CARBON	470	5%	1/4W
R122	1-249-413-11	CARBON	470	5%	1/4W
R123	1-249-413-11	CARBON	470	5%	1/4W
R124	1-247-897-11	CARBON	560K	5%	1/4W
R125	1-247-897-11	CARBON	560K	5%	1/4W
R126	1-247-897-11	CARBON	560K	5%	1/4W
R127	1-247-897-11	CARBON	560K	5%	1/4W
R128	1-249-409-11	CARBON	220	5%	1/4W
R129	1-249-441-11	CARBON	100K	5%	1/4W
R130	1-249-441-11	CARBON	100K	5%	1/4W
R131	1-249-441-11	CARBON	100K	5%	1/4W
R132	1-249-429-11	CARBON	10K	5%	1/4W
R140	1-249-429-11	CARBON	10K	5%	1/4W
R141	1-249-429-11	CARBON	10K	5%	1/4W
R142	1-249-433-11	CARBON	22K	5%	1/4W
R151	1-249-441-11	CARBON	100K	5%	1/4W
R152	1-249-417-11	CARBON	1K	5%	1/4W
R153	1-249-441-11	CARBON	100K	5%	1/4W
R154	1-249-416-11	CARBON	820	5%	1/4W
R155	1-247-897-11	CARBON	560K	5%	1/4W
R156	1-249-437-11	CARBON	47K	5%	1/4W
R157	1-249-441-11	CARBON	100K	5%	1/4W
R158	1-249-409-11	CARBON	220	5%	1/4W
R159	1-249-409-11	CARBON	220	5%	1/4W
R160	1-247-897-11	CARBON	560K	5%	1/4W
R161	1-247-897-11	CARBON	560K	5%	1/4W
R162	1-247-897-11	CARBON	560K	5%	1/4W
R163	1-247-897-11	CARBON	560K	5%	1/4W
R164	1-247-897-11	CARBON	560K	5%	1/4W
R165	1-249-417-11	CARBON	1K	5%	1/4W
R166	1-249-417-11	CARBON	1K	5%	1/4W
R167	1-249-417-11	CARBON	1K	5%	1/4W
R168	1-249-417-11	CARBON	1K	5%	1/4W
R169	1-249-417-11	CARBON	1K	5%	1/4W
R170	1-249-413-11	CARBON	470	5%	1/4W
R171	1-249-413-11	CARBON	470	5%	1/4W
R172	1-249-413-11	CARBON	470	5%	1/4W
R173	1-249-413-11	CARBON	470	5%	1/4W
R174	1-247-897-11	CARBON	560K	5%	1/4W
R175	1-247-897-11	CARBON	560K	5%	1/4W

Ref.No.	Part No.	Description
---------	----------	-------------

R176	1-247-897-11	CARBON	560K	5%	1/4W
R177	1-247-897-11	CARBON	560K	5%	1/4W
R178	1-249-409-11	CARBON	220	5%	1/4W
R179	1-249-441-11	CARBON	100K	5%	1/4W
R180	1-249-441-11	CARBON	100K	5%	1/4W
R181	1-249-441-11	CARBON	100K	5%	1/4W
R201	1-247-804-11	CARBON	75	5%	1/4W
R202	1-247-804-11	CARBON	75	5%	1/4W
R203	1-247-804-11	CARBON	75	5%	1/4W
R204	1-247-804-11	CARBON	75	5%	1/4W
R205	1-247-804-11	CARBON	75	5%	1/4W
R206	1-247-804-11	CARBON	75	5%	1/4W
R207	1-249-433-11	CARBON	22K	5%	1/4W
R208	1-249-433-11	CARBON	22K	5%	1/4W
R209	1-249-439-11	CARBON	68K	5%	1/4W
R210	1-249-433-11	CARBON	22K	5%	1/4W
R211	1-249-416-11	CARBON	820	5%	1/4W
R212	1-249-423-11	CARBON	3.3K	5%	1/4W
R213	1-249-426-11	CARBON	5.6K	5%	1/4W
R214	1-249-423-11	CARBON	3.3K	5%	1/4W
R215	1-249-408-11	CARBON	180	5%	1/4W
R216	1-249-438-11	CARBON	56K	5%	1/4W
R217	1-249-437-11	CARBON	47K	5%	1/4W
R218	1-249-408-11	CARBON	180	5%	1/4W
R219	1-249-438-11	CARBON	56K	5%	1/4W
R220	1-249-437-11	CARBON	47K	5%	1/4W
R221	1-249-414-11	CARBON	560	5%	1/4W
R222	1-249-414-11	CARBON	560	5%	1/4W
R223	1-249-410-11	CARBON	270	5%	1/4W
R224	1-249-408-11	CARBON	180	5%	1/4W
R225	1-249-408-11	CARBON	180	5%	1/4W
R301	1-249-407-11	CARBON	150	5%	1/4W
R302	1-249-434-11	CARBON	27K	5%	1/4W
R303	1-249-422-11	CARBON	2.7K	5%	1/4W
R304	1-249-421-11	CARBON	2.2K	5%	1/4W
R305	1-247-862-11	CARBON	20K	5%	1/4W
R310	1-249-421-11	CARBON	2.2K	5%	1/4W
R311	1-249-429-11	CARBON	10K	5%	1/4W
R312	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-425-11	CARBON	4.7K	5%	1/4W
R314	1-249-425-11	CARBON	4.7K	5%	1/4W
R315	1-249-425-11	CARBON	4.7K	5%	1/4W
R316	1-249-425-11	CARBON	4.7K	5%	1/4W
R317	1-249-417-11	CARBON	1K	5%	1/4W
R326	1-249-425-11	CARBON	4.7K	5%	1/4W
R401	1-249-401-11	CARBON	47	5%	1/4W
R403	1-249-437-11	CARBON	47K	5%	1/4W
R405	1-249-405-11	CARBON	100	5%	1/4W
R406	1-249-423-11	CARBON	3.3K	5%	1/4W
R407	1-249-427-11	CARBON	6.8K	5%	1/4W
R408	1-249-405-11	CARBON	100	5%	1/4W
R409	1-247-881-00	CARBON	120K	5%	1/4W
R410	1-249-437-11	CARBON	47K	5%	1/4W
R411	1-249-440-11	CARBON	82K	5%	1/4W
R412	1-249-421-11	CARBON	2.2K	5%	1/4W
R413	1-249-437-11	CARBON	47K	5%	1/4W
R414	1-249-421-11	CARBON	2.2K	5%	1/4W

Ref.No.	Part No.	Description
---------	----------	-------------

R415	1-249-421-11	CARBON	2.2K	5%	1/4W
R416	1-259-432-11	CARBON	1.5K	5%	1/6W
R417	1-259-432-11	CARBON	1.5K	5%	1/6W
R418	1-259-436-11	CARBON	2.2K	5%	1/6W
R419	1-259-444-11	CARBON	4.7K	5%	1/6W
R420	1-259-444-11	CARBON	4.7K	5%	1/6W
R421	1-259-468-11	CARBON	47K	5%	1/6W
R423	1-249-393-11	CARBON	10	5%	1/4W
R424	1-259-421-11	CARBON	510	5%	1/6W
R425	1-249-425-11	CARBON	4.7K	5%	1/4W
R426	1-259-465-11	CARBON	36K	5%	1/6W
R427	1-259-450-11	CARBON	8.2K	5%	1/6W
R428	1-249-425-11	CARBON	4.7K	5%	1/4W
R429	1-249-425-11	CARBON	4.7K	5%	1/4W
R433	1-247-903-00	CARBON	1M	5%	1/4W
R434	1-249-417-11	CARBON	1K	5%	1/4W
R439	1-249-405-11	CARBON	100	5%	1/4W
R440	1-249-405-11	CARBON	100	5%	1/4W
R441	1-249-413-11	CARBON	470	5%	1/4W
R442	1-249-405-11	CARBON	100	5%	1/4W
R445	1-249-417-11	CARBON	1K	5%	1/4W
R446	1-249-427-11	CARBON	6.8K	5%	1/4W
R447	1-249-429-11	CARBON	10K	5%	1/4W
R448	1-249-429-11	CARBON	10K	5%	1/4W
R453	1-249-437-11	CARBON	47K	5%	1/4W
R455	1-249-405-11	CARBON	100	5%	1/4W
R456	1-249-423-11	CARBON	3.3K	5%	1/4W
R457	1-249-427-11	CARBON	6.8K	5%	1/4W
R458	1-249-405-11	CARBON	100	5%	1/4W
R459	1-247-881-00	CARBON	120K	5%	1/4W
R460	1-249-437-11	CARBON	47K	5%	1/4W
R461	1-249-440-11	CARBON	82K	5%	1/4W
R462	1-249-421-11	CARBON	2.2K	5%	1/4W
R463	1-249-437-11	CARBON	47K	5%	1/4W
R464	1-249-421-11	CARBON	2.2K	5%	1/4W
R465	1-249-421-11	CARBON	2.2K	5%	1/4W
R466	1-259-432-11	CARBON	1.5K	5%	1/6W
R467	1-259-432-11	CARBON	1.5K	5%	1/6W
R468	1-259-436-11	CARBON	2.2K	5%	1/6W
R469	1-259-444-11	CARBON	4.7K	5%	1/6W
R470	1-259-444-11	CARBON	4.7K	5%	1/6W
R471	1-259-468-11	CARBON	47K	5%	1/6W
R473	1-249-393-11	CARBON	10	5%	1/4W
R474	1-259-421-11	CARBON	510	5%	1/6W
R475	1-249-425-11	CARBON	4.7K	5%	1/4W
R476	1-259-465-11	CARBON	36K	5%	1/6W
R477	1-259-450-11	CARBON	8.2K	5%	1/6W
R478	1-249-425-11	CARBON	4.7K	5%	1/4W
R479	1-249-425-11	CARBON	4.7K	5%	1/4W
R481	1-249-429-11	CARBON	10K	5%	1/4W
R482	1-249-429-11	CARBON	10K	5%	1/4W
R483	1-249-433-11	CARBON	22K	5%	1/4W
R501	1-249-433-11	CARBON	22K	5%	1/4W
R502	1-249-433-11	CARBON	22K	5%	1/4W
R503	1-249-433-11	CARBON	22K	5%	1/4W
R504	1-249-433-11	CARBON	22K	5%	1/4W
R505	1-249-433-11	CARBON	22K	5%	1/4W

Ref.No.	Part No.	Description
---------	----------	-------------

R506	1-249-433-11	CARBON	22K	5%	1/4W
R507	1-249-429-11	CARBON	10K	5%	1/4W
R508	1-249-437-11	CARBON	47K	5%	1/4W
R509	1-249-429-11	CARBON	10K	5%	1/4W
R510	1-249-437-11	CARBON	47K	5%	1/4W
R511	1-249-433-11	CARBON	22K	5%	1/4W
R513	1-249-429-11	CARBON	10K	5%	1/4W
R514	1-249-437-11	CARBON	47K	5%	1/4W
R515	1-249-433-11	CARBON	22K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-437-11	CARBON	47K	5%	1/4W
R518	1-249-433-11	CARBON	22K	5%	1/4W
R520	1-249-429-11	CARBON	10K	5%	1/4W
R521	1-249-417-11	CARBON	1K	5%	1/4W
R522	1-249-393-11	CARBON	10	5%	1/4W
R523	1-249-429-11	CARBON	10K	5%	1/4W
R524	1-249-429-11	CARBON	10K	5%	1/4W
R525	1-249-411-11	CARBON	330	5%	1/4W
R526	1-249-411-11	CARBON	330	5%	1/4W
R527	1-249-425-11	CARBON	4.7K	5%	1/4W
R528	1-249-433-11	CARBON	22K	5%	1/4W
R529	1-249-433-11	CARBON	22K	5%	1/4W
R530	1-249-433-11	CARBON	22K	5%	1/4W
R531	1-249-433-11	CARBON	22K	5%	1/4W
R532	1-249-433-11	CARBON	22K	5%	1/4W
R533	1-249-437-11	CARBON	47K	5%	1/4W
R534	1-249-433-11	CARBON	22K	5%	1/4W
R535	1-249-437-11	CARBON	47K	5%	1/4W
R536	1-249-433-11	CARBON	22K	5%	1/4W
R537	1-249-433-11	CARBON	22K	5%	1/4W
R538	1-249-433-11	CARBON	22K	5%	1/4W
R539	1-249-433-11	CARBON	22K	5%	1/4W
R540	1-249-433-11	CARBON	22K	5%	1/4W
R541	1-249-433-11	CARBON	22K	5%	1/4W
R542	1-249-433-11	CARBON	22K	5%	1/4W
R543	1-249-433-11	CARBON	22K	5%	1/4W
R544	1-249-437-11	CARBON	47K	5%	1/4W
R545	1-249-433-11	CARBON	22K	5%	1/4W
R546	1-249-437-11	CARBON	47K	5%	1/4W
R547	1-249-433-11	CARBON	22K	5%	1/4W
R548	1-249-437-11	CARBON	47K	5%	1/4W
R549	1-249-433-11	CARBON	22K	5%	1/4W
R550	1-249-437-11	CARBON	47K	5%	1/4W
R551	1-249-433-11	CARBON	22K	5%	1/4W
R552	1-249-437-11	CARBON	47K	5%	1/4W
R553	1-249-421-11	CARBON	2.2K	5%	1/4W
R554	1-249-430-11	CARBON	12K	5%	1/4W
R555	1-249-430-11	CARBON	12K	5%	1/4W
R556	1-249-430-11	CARBON	12K	5%	1/4W
R557	1-249-433-11	CARBON	22K	5%	1/4W
R558	1-249-433-11	CARBON	22K	5%	1/4W
R559	1-249-433-11	CARBON	22K	5%	1/4W
R560	1-249-433-11	CARBON	22K	5%	1/4W
R561	1-249-430-11	CARBON	12K	5%	1/4W
R562	1-249-420-11	CARBON	1.8K	5%	1/4W
R563	1-249-429-11	CARBON	10K	5%	1/4W
R564	1-249-429-11	CARBON	10K	5%	1/4W



Ref.No.	Part No.	Description							
R565	1-249-429-11	CARBON	10K	5%	1/4W				
R566	1-249-433-11	CARBON	22K	5%	1/4W				
R567	1-249-429-11	CARBON	10K	5%	1/4W				
R568	1-249-441-11	CARBON	100K	5%	1/4W				
R569	1-249-429-11	CARBON	10K	5%	1/4W				
R570	1-249-433-11	CARBON	22K	5%	1/4W				
R601	1-249-417-11	CARBON	1K	5%	1/4W				
R602	1-249-429-11	CARBON	10K	5%	1/4W				
R603	1-249-429-11	CARBON	10K	5%	1/4W				
R604	1-249-413-11	CARBON	470	5%	1/4W				
R605	1-249-437-11	CARBON	47K	5%	1/4W				
R606	1-249-437-11	CARBON	47K	5%	1/4W				
R607	1-249-437-11	CARBON	47K	5%	1/4W				
R608	1-249-437-11	CARBON	47K	5%	1/4W				
R609	1-249-429-11	CARBON	10K	5%	1/4W				
R610	1-249-419-11	CARBON	1.5K	5%	1/4W				
R611	1-249-441-11	CARBON	100K	5%	1/4W				
R612	1-249-437-11	CARBON	47K	5%	1/4W				
R614	1-249-429-11	CARBON	10K	5%	1/4W				
R615	1-249-429-11	CARBON	10K	5%	1/4W				
R616	1-249-429-11	CARBON	10K	5%	1/4W				
R617	1-249-429-11	CARBON	10K	5%	1/4W				
R618	1-249-429-11	CARBON	10K	5%	1/4W				
R619	1-249-429-11	CARBON	10K	5%	1/4W				
R620	1-249-429-11	CARBON	10K	5%	1/4W				
R621	1-249-429-11	CARBON	10K	5%	1/4W				
R622	1-249-429-11	CARBON	10K	5%	1/4W				
R623	1-249-429-11	CARBON	10K	5%	1/4W				
R624	1-249-429-11	CARBON	10K	5%	1/4W				
R625	1-249-429-11	CARBON	10K	5%	1/4W				
R626	1-249-422-11	CARBON	2.7K	5%	1/4W				
R627	1-249-429-11	CARBON	10K	5%	1/4W				
R628	1-249-422-11	CARBON	2.7K	5%	1/4W				
R629	1-249-429-11	CARBON	10K	5%	1/4W				
R630	1-249-422-11	CARBON	2.7K	5%	1/4W				
R631	1-249-429-11	CARBON	10K	5%	1/4W				
R632	1-249-422-11	CARBON	2.7K	5%	1/4W				
R633	1-249-429-11	CARBON	10K	5%	1/4W				
R634	1-249-422-11	CARBON	2.7K	5%	1/4W				
R635	1-249-429-11	CARBON	10K	5%	1/4W				
R641	1-249-402-11	CARBON	56	5%	1/4W				
R642	1-249-408-11	CARBON	180	5%	1/4W				
R643	1-249-408-11	CARBON	180	5%	1/4W				
R644	1-249-402-11	CARBON	56	5%	1/4W				
R647	1-249-402-11	CARBON	56	5%	1/4W				
R648	1-249-402-11	CARBON	56	5%	1/4W				
R649	1-249-402-11	CARBON	56	5%	1/4W				
R650	1-249-402-11	CARBON	56	5%	1/4W				
R651	1-249-402-11	CARBON	56	5%	1/4W				
R652	1-249-402-11	CARBON	56	5%	1/4W				
R653	1-249-402-11	CARBON	56	5%	1/4W				
R654	1-249-408-11	CARBON	180	5%	1/4W				
R655	1-249-408-11	CARBON	180	5%	1/4W				
R656	1-249-402-11	CARBON	56	5%	1/4W				
R657	1-249-402-11	CARBON	56	5%	1/4W				
R658	1-249-402-11	CARBON	56	5%	1/4W				
R659	1-249-402-11	CARBON	56	5%	1/4W				
R660	1-249-402-11	CARBON	56	5%	1/4W				
R661	1-249-402-11	CARBON	56	5%	1/4W				
R662	1-249-402-11	CARBON	56	5%	1/4W				
R663	1-249-402-11	CARBON	56	5%	1/4W				
R665	1-249-408-11	CARBON	180	5%	1/4W				
R666	1-249-402-11	CARBON	56	5%	1/4W				
R667	1-249-402-11	CARBON	56	5%	1/4W				
R668	1-249-402-11	CARBON	56	5%	1/4W				
R669	1-249-402-11	CARBON	56	5%	1/4W				
R670	1-249-402-11	CARBON	56	5%	1/4W				
R671	1-249-408-11	CARBON	180	5%	1/4W				
R701	1-249-441-11	CARBON	100K	5%	1/4W				
R702	1-249-441-11	CARBON	100K	5%	1/4W				
R703	1-249-417-11	CARBON	1K	5%	1/4W				
R704	1-249-405-11	CARBON	100	5%	1/4W				
R705	1-247-887-00	CARBON	220K	5%	1/4W				
R706	1-249-409-11	CARBON	220	5%	1/4W				
R707	1-249-440-11	CARBON	82K	5%	1/4W				
R708	1-247-901-11	CARBON	820K	5%	1/4W				
R709	1-249-435-11	CARBON	33K	5%	1/4W				
R710	1-247-903-00	CARBON	1M	5%	1/4W				
R711	1-249-441-11	CARBON	100K	5%	1/4W				
R712	1-249-441-11	CARBON	100K	5%	1/4W				
R713	1-247-903-00	CARBON	1M	5%	1/4W				
R714	1-249-432-11	CARBON	18K	5%	1/4W				
R715	1-249-441-11	CARBON	100K	5%	1/4W				
R716	1-249-441-11	CARBON	100K	5%	1/4W				
R717	1-247-903-00	CARBON	1M	5%	1/4W				
R718	1-249-425-11	CARBON	4.7K	5%	1/4W				
R719	1-249-441-11	CARBON	100K	5%	1/4W				
R720	1-249-439-11	CARBON	68K	5%	1/4W				
R721	1-247-899-11	CARBON	680K	5%	1/4W				
R722	1-249-424-11	CARBON	3.9K	5%	1/4W				
R723	1-249-441-11	CARBON	100K	5%	1/4W				
R724	1-249-439-11	CARBON	68K	5%	1/4W				
R725	1-247-899-11	CARBON	680K	5%	1/4W				
R726	1-249-424-11	CARBON	3.9K	5%	1/4W				
R727	1-249-441-11	CARBON	100K	5%	1/4W				
R728	1-249-439-11	CARBON	68K	5%	1/4W				
R729	1-247-899-11	CARBON	680K	5%	1/4W				
R730	1-249-425-11	CARBON	4.7K	5%	1/4W				
R731	1-249-441-11	CARBON	100K	5%	1/4W				
R732	1-249-439-11	CARBON	68K	5%	1/4W				
R733	1-247-899-11	CARBON	680K	5%	1/4W				
R734	1-249-423-11	CARBON	3.3K	5%	1/4W				
R735	1-249-441-11	CARBON	100K	5%	1/4W				
R736	1-249-435-11	CARBON	33K	5%	1/4W				
R737	1-247-891-00	CARBON	330K	5%	1/4W				
R738	1-249-420-11	CARBON	1.8K	5%	1/4W				
R739	1-249-441-11	CARBON	100K	5%	1/4W				
R740	1-249-434-11	CARBON	27K	5%	1/4W				
R741	1-247-889-00	CARBON	270K	5%	1/4W				
R742	1-249-419-11	CARBON	1.5K	5%	1/4W				
R743	1-249-441-11	CARBON	100K	5%	1/4W				
R744	1-249-432-11	CARBON	18K	5%	1/4W				
R745	1-247-885-00	CARBON	180K	5%	1/4W				
R746	1-249-418-11	CARBON	1.2K	5%	1/4W				

Ref.No.	Part No.	Description			
R747	1-249-441-11	CARBON	100K	5%	1/4W
R748	1-249-431-11	CARBON	15K	5%	1/4W
R749	1-247-883-00	CARBON	150K	5%	1/4W
R750	1-249-417-11	CARBON	1K	5%	1/4W
R751	1-249-441-11	CARBON	100K	5%	1/4W
R752	1-249-411-11	CARBON	330	5%	1/4W
R753	1-249-421-11	CARBON	2.2K	5%	1/4W
R801	1-259-450-11	CARBON	8.2K	5%	1/6W
R802	1-259-450-11	CARBON	8.2K	5%	1/6W
R803	1-259-450-11	CARBON	8.2K	5%	1/6W
R804	1-249-409-11	CARBON	220	5%	1/4W
R805	1-259-436-11	CARBON	2.2K	5%	1/6W
R808	1-259-476-11	CARBON	100K	5%	1/6W
R810	1-259-428-11	CARBON	1K	5%	1/6W
R811	1-259-476-11	CARBON	100K	5%	1/6W
R812	1-259-428-11	CARBON	1K	5%	1/6W
R813	1-249-417-11	CARBON	1K	5%	1/4W
R815	1-249-433-11	CARBON	22K	5%	1/4W
R816	1-249-409-11	CARBON	220	5%	1/4W
R817	1-249-409-11	CARBON	220	5%	1/4W
R831	1-249-429-11	CARBON	10K	5%	1/4W
R832	1-249-417-11	CARBON	1K	5%	1/4W
R833	1-249-441-11	CARBON	100K	5%	1/4W
R834	1-249-412-11	CARBON	390	5%	1/4W
R835	1-249-441-11	CARBON	100K	5%	1/4W
R836	1-249-416-11	CARBON	820	5%	1/4W
R839	1-249-437-11	CARBON	47K	5%	1/4W
R840	1-249-429-11	CARBON	10K	5%	1/4W
R841	△ 1-212-865-00	FUSIBLE	22	5%	1/4W F
R842	△ 1-212-865-00	FUSIBLE	22	5%	1/4W F
R851	1-259-450-11	CARBON	8.2K	5%	1/6W
R852	1-259-450-11	CARBON	8.2K	5%	1/6W
R853	1-259-450-11	CARBON	8.2K	5%	1/6W
R854	1-249-409-11	CARBON	220	5%	1/4W
R855	1-259-436-11	CARBON	2.2K	5%	1/6W
R858	1-259-476-11	CARBON	100K	5%	1/6W
R860	1-259-428-11	CARBON	1K	5%	1/6W
R861	1-259-476-11	CARBON	100K	5%	1/6W
R862	1-259-428-11	CARBON	1K	5%	1/6W
R863	1-249-417-11	CARBON	1K	5%	1/4W
R901	1-249-426-11	CARBON	5.6K	5%	1/4W
R902	1-249-429-11	CARBON	10K	5%	1/4W
R903	△ 1-212-942-00	FUSIBLE	2.2	5%	1/2W F
R904	△ 1-212-942-00	FUSIBLE	2.2	5%	1/2W F
R905	△ 1-217-469-00	FUSIBLE	1	5%	1W F
R906	△ 1-212-873-11	FUSIBLE	47	5%	1/4W F
R908	1-249-429-11	CARBON	10K	5%	1/4W
R909	1-249-429-11	CARBON	10K	5%	1/4W
R910	1-249-401-11	CARBON	47	5%	1/4W
R911	1-249-417-11	CARBON	1K	5%	1/4W
RT001	1-249-441-11	CARBON	100K	5%	1/4W
RV801	1-238-101-41	RES, VAR, SLIDE 100K			
RV802	1-238-423-11	RES, VAR, CARBON 100K/100K/10K			
RV803	1-237-883-11	RES, VAR, CARBON 50K			
RX302	8-759-977-72	GPIF31R			
RX303	8-759-977-72	GPIF31R			

Ref.No.	Part No.	Description
S501	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S502	1-554-303-21	SWITCH, KEY BOARD (3)
S503	1-554-303-21	SWITCH, KEY BOARD (10)
S504	1-554-303-21	SWITCH, KEY BOARD (9)
S505	1-554-303-21	SWITCH, KEY BOARD (6)
S506	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S507	1-554-303-21	SWITCH, KEY BOARD (TUNER)
S508	1-554-303-21	SWITCH, KEY BOARD (▶)
S509	1-554-303-21	SWITCH, KEY BOARD (4)
S510	1-554-303-21	SWITCH, KEY BOARD (7)
S511	1-554-303-21	SWITCH, KEY BOARD (8)
S512	1-554-303-21	SWITCH, KEY BOARD (5)
S513	1-554-303-21	SWITCH, KEY BOARD (2)
S514	1-554-303-21	SWITCH, KEY BOARD (1)
S515	1-554-303-21	SWITCH, KEY BOARD (CD)
S516	1-554-303-21	SWITCH, KEY BOARD (DAT)
S518	1-554-303-21	SWITCH, KEY BOARD (VIDEO 1)
S519	1-554-303-21	SWITCH, KEY BOARD (VIDEO 2/DAT)
S520	1-554-303-21	SWITCH, KEY BOARD (VIDEO 3/CD)
S521	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S522	1-554-303-21	SWITCH, KEY BOARD (FREQUENCY 1)
S523	1-554-303-21	SWITCH, KEY BOARD (FREQUENCY 2)
S524	1-554-303-21	SWITCH, KEY BOARD (SURROUND CONTROL)
S525	1-554-303-21	SWITCH, KEY BOARD (◀)
S526	1-554-303-21	SWITCH, KEY BOARD (PRESET CALL)
S527	1-554-303-21	SWITCH, KEY BOARD (REVERSE)
S528	1-554-303-21	SWITCH, KEY BOARD (EQ SLOPE)
S529	1-554-303-21	SWITCH, KEY BOARD (▼)
S530	1-554-303-21	SWITCH, KEY BOARD (FREQUENCY 3)
S531	1-554-303-21	SWITCH, KEY BOARD (FLAT)
S532	1-554-303-21	SWITCH, KEY BOARD (DIGITAL DYNAMIC SOUND)
S533	1-554-303-21	SWITCH, KEY BOARD (DIGITAL PRESENCE SURROUND)
S534	1-554-303-21	SWITCH, KEY BOARD (▲)
S536	1-554-303-21	SWITCH, KEY BOARD (DIGITAL EFFECT)
S537	1-554-303-21	SWITCH, KEY BOARD (EQUALIZER RECORDING)
S538	1-554-303-21	SWITCH, KEY BOARD (DISPLAY)
S539	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S901	△ 1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T901	△ 1-449-767-11	TRANSFORMER, POWER
X301	1-577-269-11	VIBRATOR, CRYSTAL
X401	1-577-305-11	VIBRATOR, CRYSTAL

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

# TA-V925NE

## SERVICE MANUAL

*AEP Model*  
*UK Model*



This set is the Stereo Power  
amplifier section in  
LBT-V925CD

### SPECIFICATIONS

#### Power amplifier

Power output	85 W + 85 W at 5 % distortion
Power consumption	150 W
AC outlets	2 unswitched. 200 W max.
Dimensions	355 × 132 × 335 mm (w/h/d) (14 × 5 <sup>1</sup> / <sub>5</sub> × 13 <sup>1</sup> / <sub>8</sub> inches)
Weight	Approx. 6.7 kg (14 lb 13 oz)

#### General

Power requirements 240 V AC, 50 Hz

Design and specifications subject to change without notice.

STEREO POWER AMPLIFIER  
**SONY®**

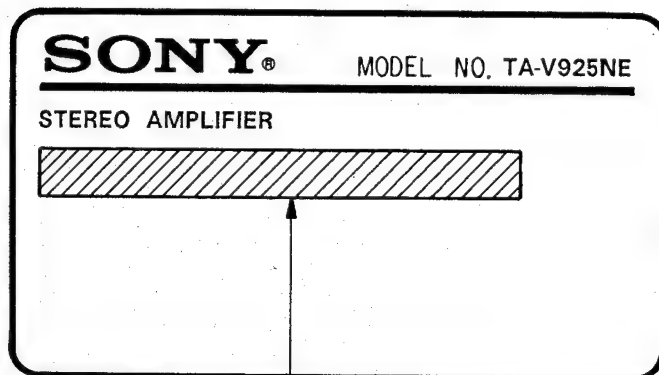


## TABLE OF CONTENTS

Title	Description	Page
Specifications .....		1
Model Identification .....		2
<b>1. GENERAL</b>		
1-1. Function of Controls .....		3
<b>2. DISASSEMBLY</b> .....		4
<b>3. ELECTRICAL ADJUSTMENTS</b> .....		4
<b>4. DIAGRAMS</b>		
4-1. Circuit Boards Location .....		5
4-2. Semiconductors Lead Layout .....		6
4-3. Printed Wiring Boards .....		7
4-4. Schematic Diagram .....		11
<b>5. EXPLODED VIEW</b> .....		15
<b>6. ELECTRICAL PARTS LIST</b> .....		17



## MODEL IDENTIFICATION

— Specification Label —



AEP, Italian Model : AC : 220V~50/60Hz 150W  
 UK Model : AC : 240V~50/60Hz 150W

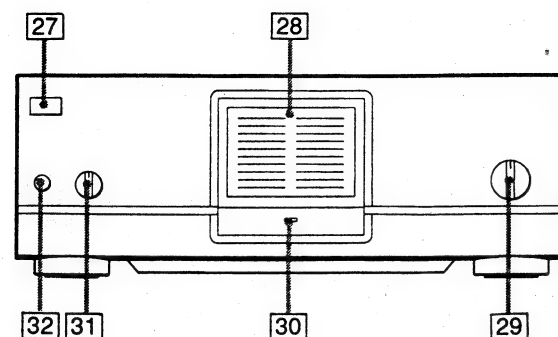
## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



## SECTION 1 GENERAL

### Parts Identification



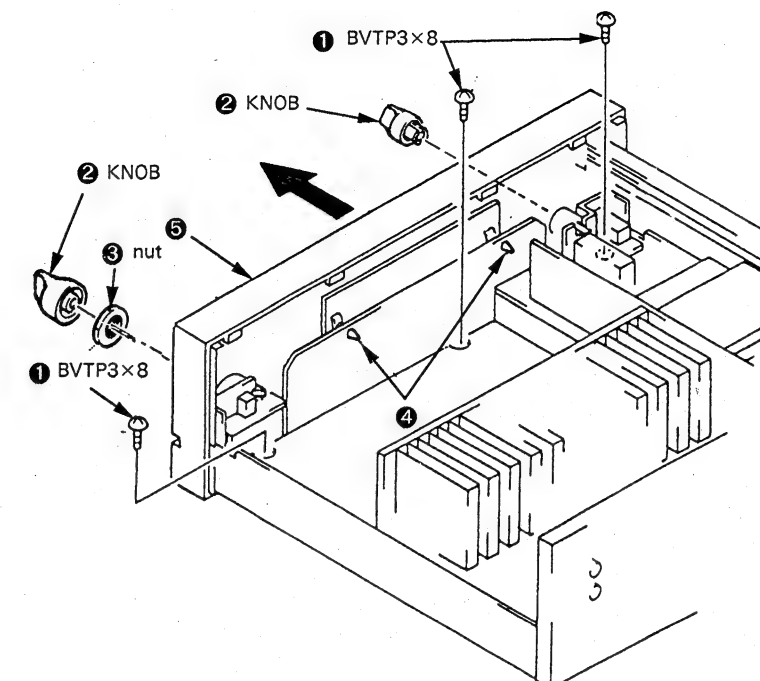
### Power amplifier

- 27 POWER switch
- 28 PEAK POWER METER
- 29 METER RANGE selector
- 30 OPERATION indicator
- 31 SPEAKERS selector
- 32 HEADPHONES jack (stereo phone jack)

## SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

### [FRONT PANEL]



## SECTION 3 ELECTRICAL ADJUSTMENTS

### [DC Bias Adjustment]

Perform this adjustment when replacing the transistors or ICs of the power amplifier.

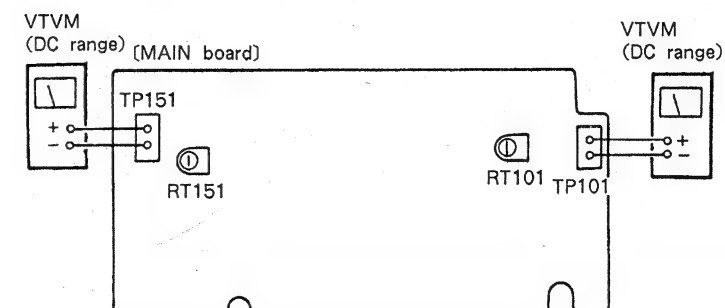
#### Setup :

- No signal (No load)
- Minimum volume

#### Procedure :

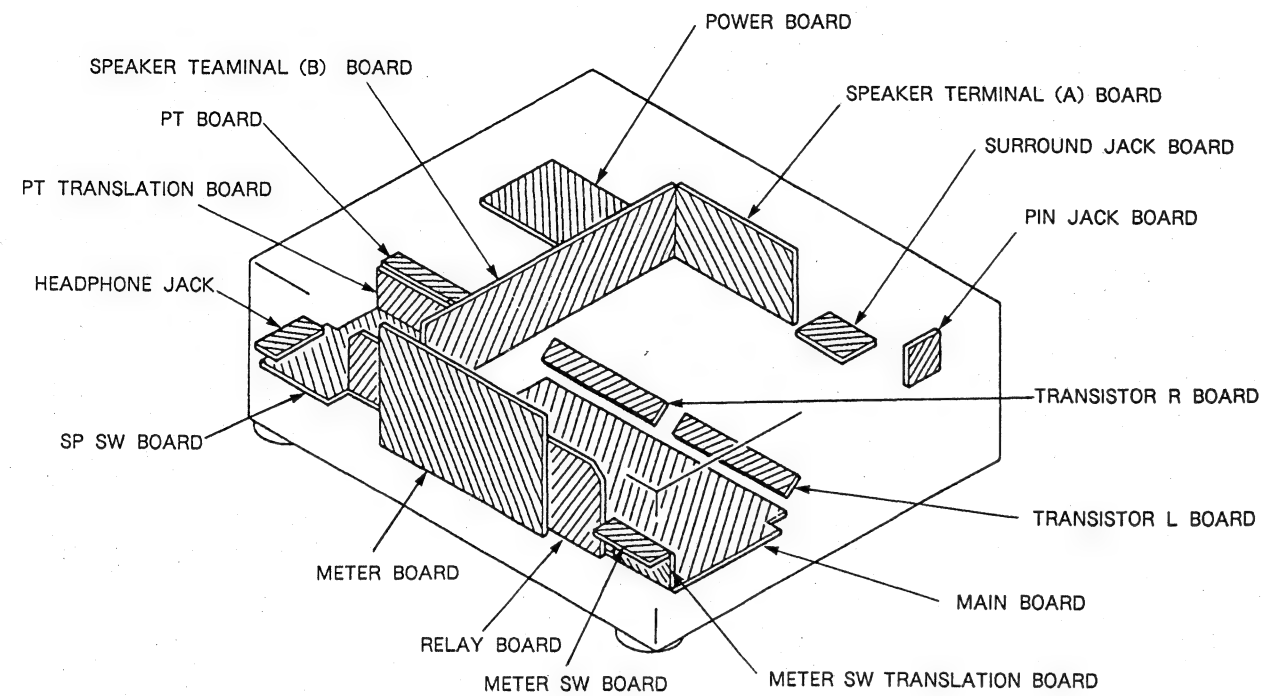
1. Connect DC volt meter to the TP.
2. Turn on the power and wait for 3 minutes, then adjust RT101 (L-CH) and RT151 (R-CH) so that the bias voltage becomes 7mV.

#### Adjustment Location :



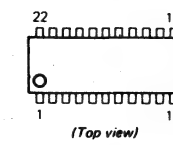
## SECTION 4 DIAGRAMS

### 4-1. CIRCUIT BOARDS LOCATION



### 4-2. SEMICONDUCTORS LEAD LAYOUT

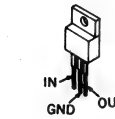
IR2E44



2SC1841-PA



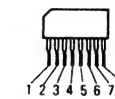
M5F7812



1SS1585  
10E2N



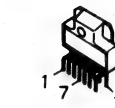
$\mu$ PC1237HA



30DL4-FC



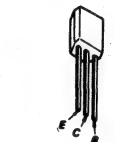
$\mu$ PC1298V



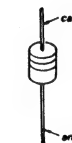
SLR-34UW5



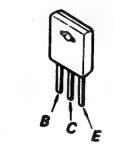
2SA1348  
2SC3402  
DTA114ES



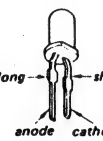
1SS120



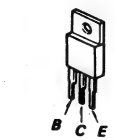
2SA1232  
2SC3012



SEL2410E-C



2SD1585-K

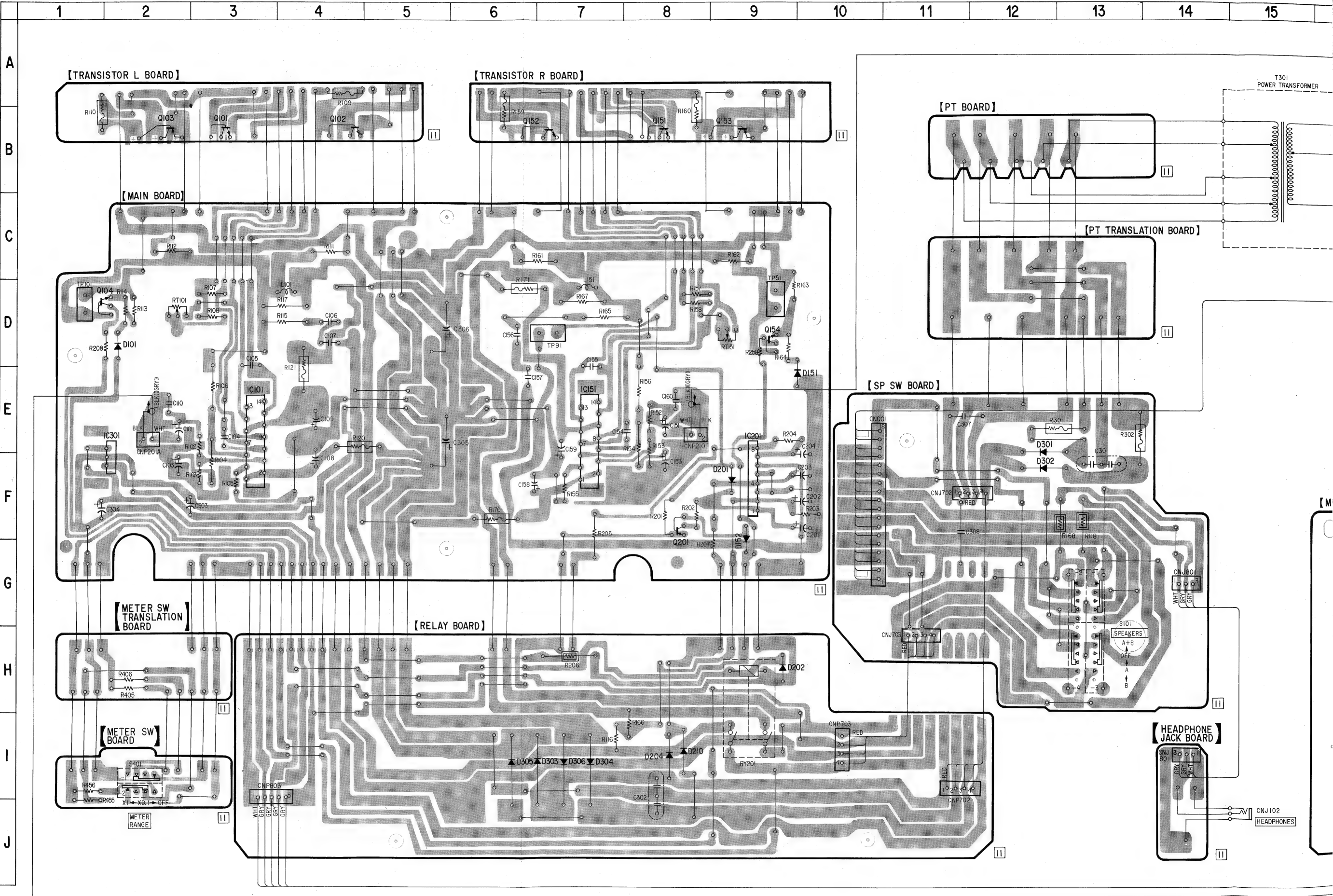


• SEMICONDUCTOR LOCATION

Ref. No.	Location
IC101	E-3
IC151	E-7
IC201	F-9
IC301	E-2
IC401	H-17
IC451	H-20
Q101	B-3
Q102	B-4
Q103	B-2
Q104	D-2
Q151	B-8
Q152	B-6
Q153	B-9
Q154	D-9
Q201	F-8
Q401	H-18
Q402	G-19
D101	D-2
D151	E-9
D152	F-9
D201	F-9
D202	H-9
D204	I-8
D210	I-8
D301	E-12
D302	F-12
D303	I-6
D304	I-7
D305	I-6
D306	I-7
D402	G-18
D404	H-18
D405	H-18
D406	H-18
D407	H-18
D408	H-18
D409	I-18
D410	I-18
D411	I-18
D412	I-18
D413	G-18
D414	G-18
D415	H-19
D452	G-19
D454	H-19
D455	H-19
D456	H-19
D457	H-19
D458	H-19
D459	I-19
D460	I-19
D461	I-19
D462	I-19

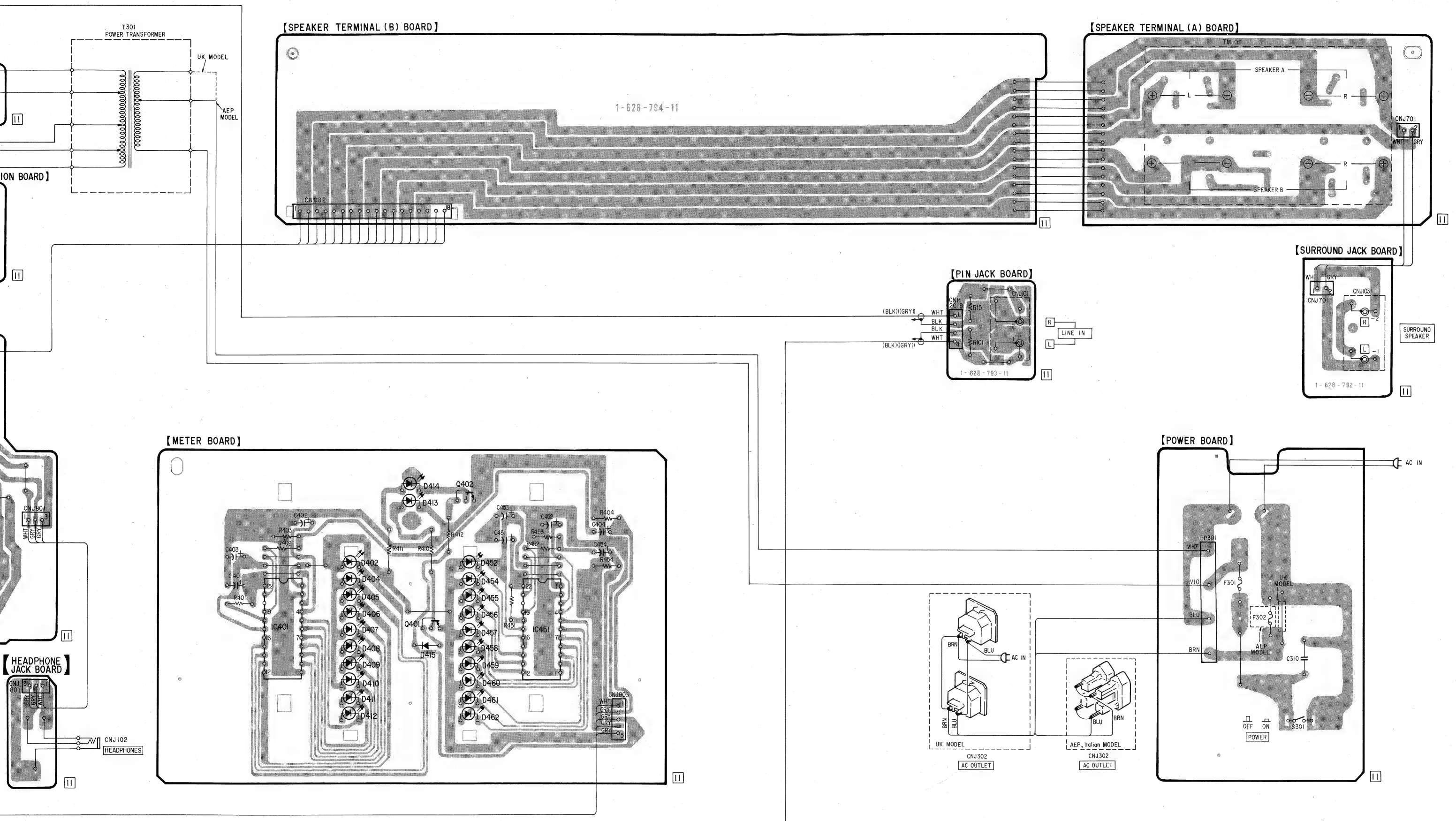
4.3. PRINTED WIRING BOARDS

• Refer to page 6 Semiconductor Lead Layouts.



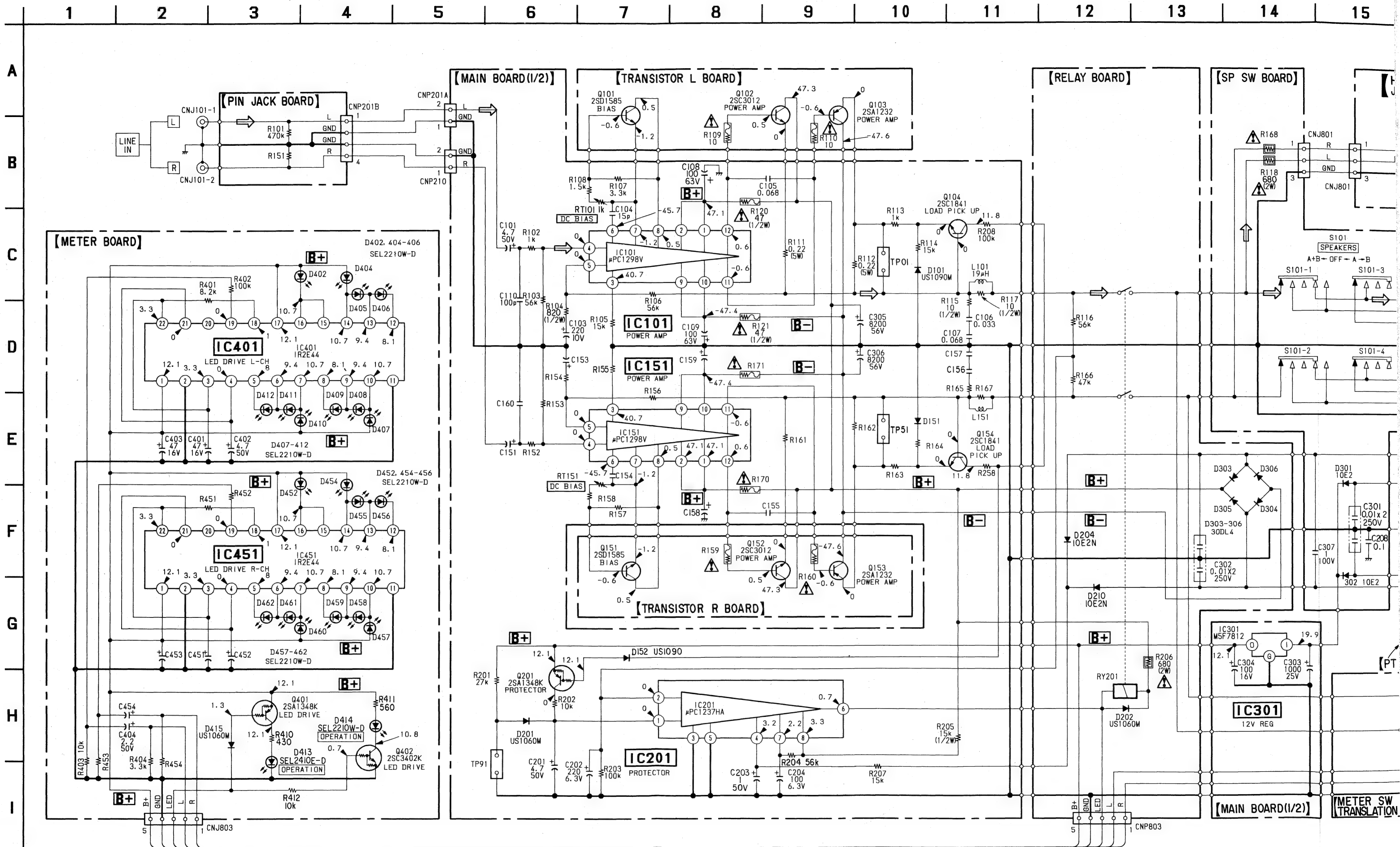
Note :  
• —○—: parts extracted from the component side.

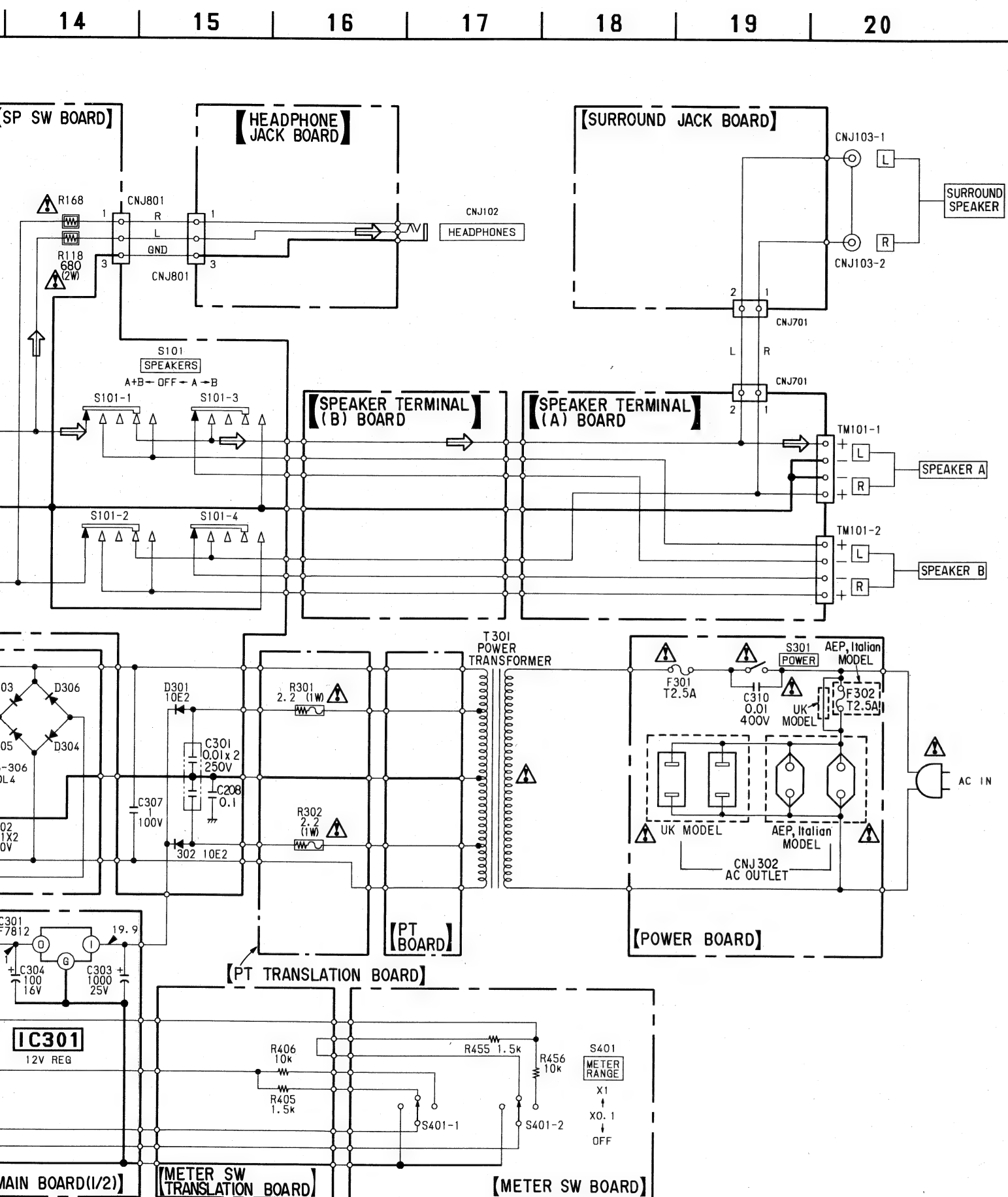




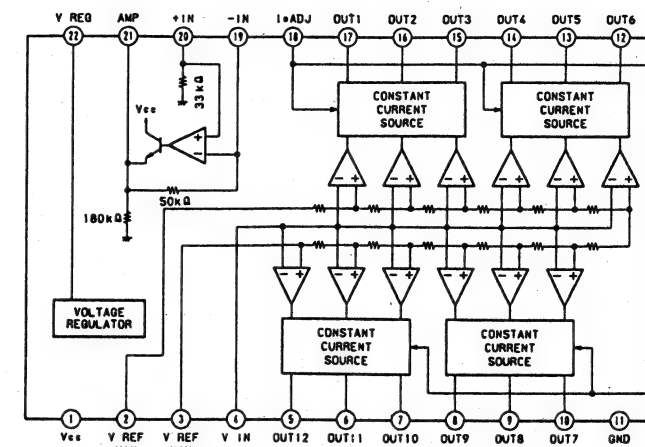


## 4.4. SCHEMATIC DIAGRAM





# • IC BLOCK DIAGRAM



## Note:



- All capacitors are in  $\mu F$  unless otherwise noted. pF:  $\mu \mu F$
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from
- : nonflammable resistor.
- : fusible resistor.
- : B+ Line
- : B- Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (input impedance 10M  $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : LINE

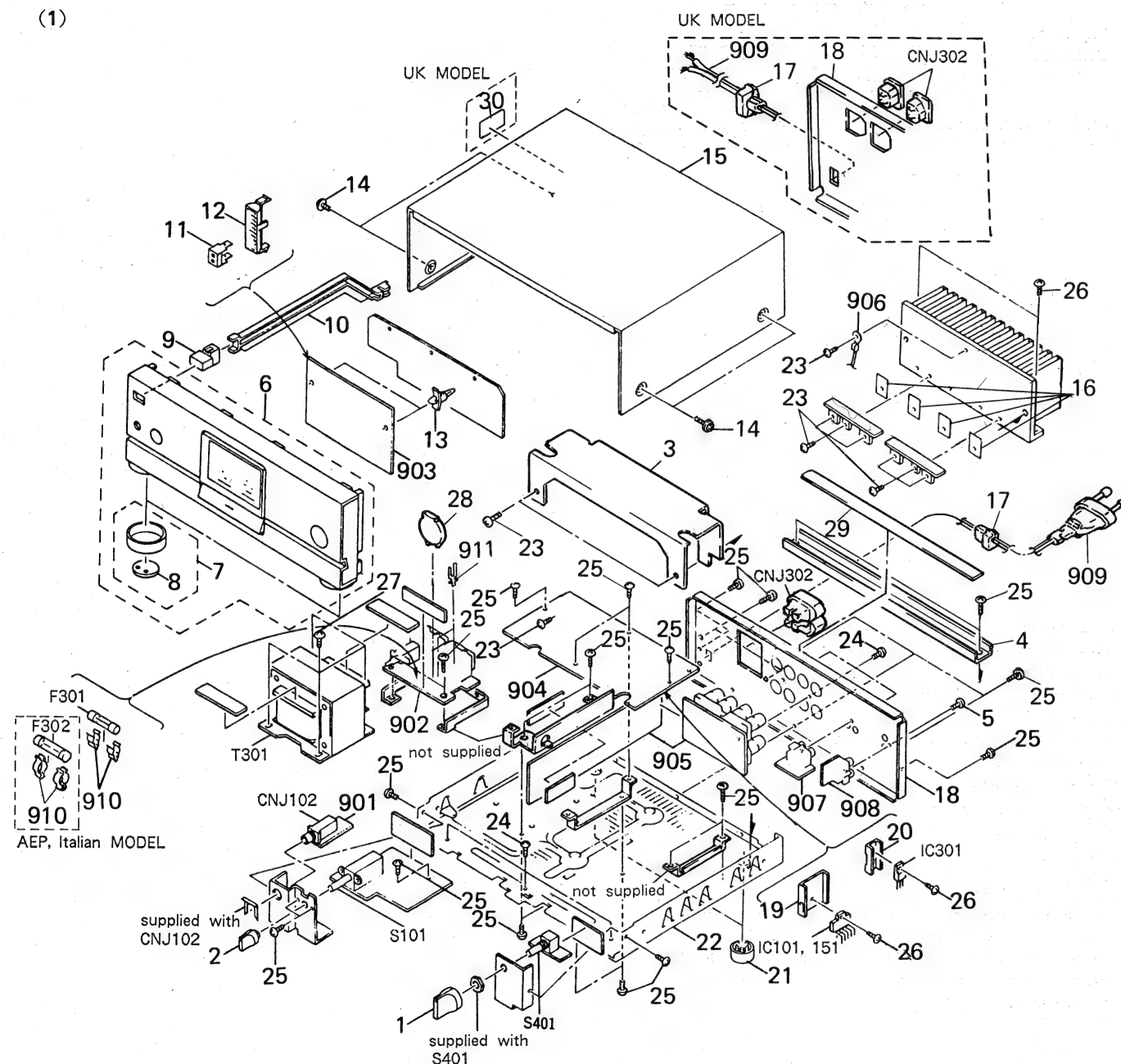
## SECTION 5 EXPLODED VIEW









### NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	4-916-745-01	KNOB (DIA.21)(METER RANGE)		28	*4-875-455-31	COVER (DIA. 20), CAPACITOR	
2	4-908-097-21	KNOB (SPEAKERS)		29	9-911-815-01	CUSHION	
3	*4-930-819-01	PLATE, SHIELD		30	3-703-079-21	(UK)....LABEL, CAUTION (BACK)	
4	*4-928-458-01	REINFORCEMENT (CHASSIS)		901	*1-628-791-11	PC BOARD, H.P JACK	
5	7-621-849-00	SCREW, TAPPING		902	*1-631-124-11	PC BOARD, POWER	
6	X-4917-273-1	PANEL ASSY, FRONT		903	*1-628-788-11	PC BOARD, METER	
7	X-4917-252-1	PLATE (LEG) ASSY, ORNAMENTAL		904	*A-4388-805-A	MOUNTED PCB, MAIN	
8	4-928-401-01	FELT		905	*1-628-794-11	PC BOARD, SPEAKER TERMIAL	
9	4-921-919-01	BUTTON (P)		906	1-800-427-00	POSISTOR	
10	*4-928-448-01	JOINT		907	*1-628-792-11	PC BOARD, SURROUND JACK	
11	*4-928-444-01	HOLDER (S), LED		908	*1-628-793-11	PC BOARD, PIN JACK	
12	*4-928-450-01	HOLDER (L), LED		909	 1-555-750-00	(AEP,Italian)...CORD, POWER	
13	*4-924-098-21	HOLDER, PC BOARD			 1-556-035-00	(UK).....CORD, POWER	
14	3-704-366-01	SCREW (CASE) (M3X8)		910	*1-533-213-31	HOLDER, FUSE	
15	4-919-379-11	CASE		911	1-535-476-11	(AEP,Italian)...TERMINAL	
16	4-911-232-01	SHEET, INSULATING		CNJ102	1-507-796-71	JACK (HEADPHONES)	
17	*3-703-244-00	BUSHING (2104), CORD		CNJ302	 1-526-751-11	(UK).....OUTLET, AC	
18	*4-930-815-11	(AEP).....PANEL, BACK		CNJ302	 1-526-794-11	(AEP,Italian)...OUTLET, AC	
	*4-930-815-21	(UK).....PANEL, BACK		F301	 1-532-286-00	FUSE, TIME-LAG (T2.5A)	
	*4-930-815-31	(Italian)...PANEL, BACK		F302	 1-532-286-00	(AEP,Italian)...FUSE, TIME-LAG (T2.5A)	
19	*4-928-442-01	HEAT SINK (S)		IC101	8-759-109-06	IC UPC1298V	
20	*3-309-144-21	HEAT SINK		IC151	8-759-109-06	IC UPC1298V	
21	4-931-169-01	FOOT		IC301	8-759-604-33	IC M5F7812	
22	*4-924-520-21	CHASSIS		S101	1-570-366-11	SWITCH, ROTARY SLIDE (SPEAKERS)	
23	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		S401	1-571-801-11	SWITCH, ROTARY (METER RANGE)	
24	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		T301	 1-449-731-11	(UK).....TRANSFORMER, POWER	
25	7-682-547-04	SCREW +BVTT 3X6 (S)		T301	 1-449-732-11	(AEP,Italian)...TRANSFORMER, POWER	
26	7-682-548-04	SCREW +BVTT 3X8 (S)					
27	7-682-560-04	SCREW +BVTT 4X6 (S)					

## SECTION 6

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**

In each case, U:  $\mu$ , for example:  
 UA....:  $\mu$ A...., UPA....:  $\mu$ PA....,  
 UPC....:  $\mu$ PC, UPD....:  $\mu$ PD....

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
901	*1-628-791-11	PC BOARD, H.P JACK
902	*1-631-124-11	PC BOARD, POWER
903	*1-628-788-11	PC BOARD, METER
904	*A-4388-805-A	MOUNTED PCB, MAIN
905	*1-628-794-11	PC BOARD, SPEAKER TERMIAL
906	1-800-427-00	POSISTOR
907	*1-628-792-11	PC BOARD, SURROUND JACK
908	*1-628-793-11	PC BOARD, PIN JACK
909	$\Delta$ 1-555-750-00	(AEP,Italian)...CORD, POWER
	$\Delta$ 1-556-035-00	(UK).....CORD, POWER
910	*1-533-213-31	HOLDER, FUSE
911	1-535-476-11	(AEP,Italian)...TERMINAL
BP301	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P
C101	1-124-927-11	ELECT 4.7MF 20% 50V
C103	1-126-335-11	ELECT 220MF 20% 10V
C104	1-102-951-00	CERAMIC 15PF 5% 50V
C105	1-136-163-00	MYLAR 0.068MF 10% 50V
C106	1-136-159-00	MYLAR 0.033MF 10% 50V
C107	1-136-163-00	MYLAR 0.068MF 10% 50V
C108	1-124-572-11	ELECT 100MF 20% 63V
C109	1-124-572-11	ELECT 100MF 20% 63V
C110	1-102-973-00	CERAMIC 100PF 5% 50V
C151	1-124-927-11	ELECT 4.7MF 20% 50V
C153	1-126-335-11	ELECT 220MF 20% 10V
C154	1-102-951-00	CERAMIC 15PF 5% 50V
C155	1-136-163-00	MYLAR 0.068MF 10% 50V
C156	1-136-159-00	MYLAR 0.033MF 10% 50V
C157	1-136-163-00	MYLAR 0.068MF 10% 50V
C158	1-124-572-11	ELECT 100MF 20% 63V
C159	1-124-572-11	ELECT 100MF 20% 63V
C160	1-102-973-00	CERAMIC 100PF 5% 50V
C201	1-124-927-11	ELECT 4.7MF 20% 50V
C202	1-126-176-11	ELECT 220MF 20% 6.3V
C203	1-124-499-11	ELECT 1MF 20% 50V
C204	1-124-443-00	ELECT 100MF 20% 6.3V
C301	1-102-394-11	CERAMIC 0.01MF 250V
C302	1-102-394-11	CERAMIC 0.01MF 250V
C303	1-124-557-11	ELECT 1000MF 20% 25V
C304	1-126-101-11	ELECT 100MF 20% 16V
C305	1-125-556-11	ELECT 8200MF 20% 56V
C306	1-125-556-11	ELECT 8200MF 20% 56V
C307	1-130-789-00	FILM 1MF 10% 100V
C308	1-164-159-11	CERAMIC 0.1MF 50V

Ref.No.	Part No.	Description
C310	1-161-744-00	CERAMIC 0.01MF 400V
C401	1-124-589-11	ELECT 47MF 20% 16V
C402	1-126-163-11	ELECT 4.7MF 20% 50V
C403	1-124-589-11	ELECT 47MF 20% 16V
C404	1-124-925-11	ELECT 2.2MF 20% 50V
C451	1-124-589-11	ELECT 47MF 20% 16V
C452	1-126-163-11	ELECT 4.7MF 20% 50V
C453	1-124-589-11	ELECT 47MF 20% 16V
C454	1-124-925-11	ELECT 2.2MF 20% 50V
CN001	*1-562-370-00	CONNECTOR, BOARD TO BOARD 18P
CN002	*1-564-346-00	CONNECTOR, BOARD TO BOARD 18P
CNJ101	1-565-319-31	JACK, PIN 2P (LINE IN)
CNJ102	1-507-796-71	JACK (HEADPHONES)
CNJ103	1-565-319-31	JACK, PIN 2P (SURROUND SPEAKER)
CNJ302A	1-526-794-11	(AEP,Italian)...OUTLET, AC
CNJ302A	1-526-751-11	(UK).....OUTLET, AC
CNP201A	*1-564-505-11	PLUG, CONNECTOR 2P
CNP201B	*1-564-507-11	PLUG, CONNECTOR 4P
CNP210	*1-564-505-11	PLUG, CONNECTOR 2P
CNP701	*1-564-505-11	PLUG, CONNECTOR 2P
CNP702	*1-564-507-11	PLUG, CONNECTOR 4P
CNP703	*1-564-507-11	PLUG, CONNECTOR 4P
CNP803	*1-564-339-00	PIN, CONNECTOR 5P
D101	8-719-815-85	DIODE 1SS1585
D151	8-719-815-85	DIODE 1SS1585
D152	8-719-815-85	DIODE 1SS1585
D201	8-719-912-20	DIODE 1SS120
D202	8-719-912-20	DIODE 1SS120
D204	8-719-200-77	DIODE 10E2N
D210	8-719-200-77	DIODE 10E2N
D301	8-719-200-77	DIODE 10E2N
D302	8-719-200-77	DIODE 10E2N
D303	8-719-230-34	DIODE 30DL4-FC
D304	8-719-230-34	DIODE 30DL4-FC
D305	8-719-230-34	DIODE 30DL4-FC
D306	8-719-230-34	DIODE 30DL4-FC
D402	8-719-900-19	DIODE SLR-34UW5
D404	8-719-900-19	DIODE SLR-34UW5
D405	8-719-900-19	DIODE SLR-34UW5
D406	8-719-900-19	DIODE SLR-34UW5
D407	8-719-900-19	DIODE SLR-34UW5
D408	8-719-900-19	DIODE SLR-34UW5
D409	8-719-900-19	DIODE SLR-34UW5
D410	8-719-900-19	DIODE SLR-34UW5

Ref.No.	Part No.	Description
D411	8-719-900-19	DIODE SLR-34UW5
D412	8-719-900-19	DIODE SLR-34UW5
D413	8-719-301-43	DIODE SEL2410EC
D414	8-719-900-19	DIODE SLR-34UW5
D415	8-719-912-20	DIODE 1SS120
D452	8-719-900-19	DIODE SLR-34UW5
D454	8-719-900-19	DIODE SLR-34UW5
D455	8-719-900-19	DIODE SLR-34UW5
D456	8-719-900-19	DIODE SLR-34UW5
D457	8-719-900-19	DIODE SLR-34UW5
D458	8-719-900-19	DIODE SLR-34UW5
D459	8-719-900-19	DIODE SLR-34UW5
D460	8-719-900-19	DIODE SLR-34UW5
D461	8-719-900-19	DIODE SLR-34UW5
D462	8-719-900-19	DIODE SLR-34UW5
F301	$\Delta$ 1-532-286-00	FUSE, TIME-LAG (T2.5A)
F302	$\Delta$ 1-532-286-00	(AEP,Italian)...FUSE, TIME-LAG (T2.5A)
IC101	8-759-109-06	IC UPC1298V
IC151	8-759-109-06	IC UPC1298V
IC201	8-759-111-68	IC UPC1237HA
IC301	8-759-604-33	IC M5F7812
IC401	8-759-979-52	IC IR2E44
IC451	8-759-979-52	IC IR2E44
L101	*1-420-872-00	COIL, AIR CORE 19UH
L151	*1-420-872-00	COIL, AIR CORE 19UH
Q101	8-729-107-26	TRANSISTOR 2SD1585
Q102	8-729-102-57	TRANSISTOR 2SC3012
Q103	8-729-102-47	TRANSISTOR 2SA1232
Q104	8-729-108-05	TRANSISTOR 2SA1841PA
Q151	8-729-107-26	TRANSISTOR 2SD1585
Q152	8-729-102-57	TRANSISTOR 2SC3012
Q153	8-729-102-47	TRANSISTOR 2SA1232
Q154	8-729-108-05	TRANSISTOR 2SA1841PA
Q201	8-729-806-10	TRANSISTOR 2SA1348
Q401	8-729-806-10	TRANSISTOR 2SA1348
Q402	8-729-806-28	TRANSISTOR 2SC3402
R101	1-247-895-00	CARBON 470K 5% 1/4W
R102	1-249-417-11	CARBON 1K 5% 1/4W
R103	1-249-438-11	CARBON 56K 5% 1/4W
R104	1-247-751-11	CARBON 820 5% 1/2W
R105	1-249-431-11	CARBON 15K 5% 1/4W
R106	1-249-493-11	CARBON 56K 5% 1/2W
R107	1-249-423-11	CARBON 3.3K 5% 1/4W
R108	1-249-419-11	CARBON 1.5K 5% 1/4W
R109	$\Delta$ 1-212-857-00	FUSIBLE 10 5% 1/4W F
R110	$\Delta$ 1-212-857-00	FUSIBLE 10 5% 1/4W F
R111	1-217-156-00	RES, METAL PLATE 0.22
R112	1-217-156-00	RES, METAL PLATE 0.22
R113	1-249-417-11	CARBON 1K 5% 1/4W
R114	1-249-431-11	CARBON 15K 5% 1/4W
R115	1-247-727-11	CARBON 10 5% 1/2W
R116	1-249-438-11	CARBON 56K 5% 1/4W
R117	1-247-727-11	CARBON 10 5% 1/2W
R118	$\Delta$ 1-215-891-11	METAL OXIDE 680 5% 2W F
R120	$\Delta$ 1-212-974-00	FUSIBLE 47 5% 1/2W F
R121	$\Delta$ 1-212-974-00	FUSIBLE 47 5% 1/2W F
R151	1-247-895-00	CARBON 470K 5% 1/4W
R152	1-249-417-11	CARBON 1K 5% 1/4W

Ref.No.	Part No.	Description
R153	1-249-438-11	CARBON 56K 5% 1/4W
R154	1-247-751-11	CARBON 820 5% 1/2W
R155	1-249-431-11	CARBON 15K 5% 1/4W
R156	1-249-493-11	CARBON 56K 5% 1/2W
R157	1-249-423-11	CARBON 3.3K 5% 1/4W
R158	1-249-419-11	CARBON 1.5K 5% 1/4W
R159	$\Delta$ 1-212-857-00	FUSIBLE 10 5% 1/4W F
R160	$\Delta$ 1-212-857-00	FUSIBLE 10 5% 1/4W F
R161	1-217-156-00	RES, METAL PLATE 0.22
R162	1-217-156-00	RES, METAL PLATE 0.22
R163	1-249-417-11	CARBON 1K 5% 1/4W
R164	1-249-431-11	CARBON 15K 5% 1/4W
R165	1-247-727-11	CARBON 10 5% 1/2W
R166	1-249-437-11	CARBON 47K 5% 1/4W
R167	1-247-727-11	CARBON 10 5% 1/2W
R168	$\Delta$ 1-215-891-11	METAL OXIDE 680 5% 2W F
R170	$\Delta$ 1-212-974-00	FUSIBLE 47 5% 1/2W F
R171	$\Delta$ 1-212-974-00	FUSIBLE 47 5% 1/2W F
R201	1-249-434-11	CARBON 27K 5% 1/4W
R202	1-249-429-11	CARBON 10K 5% 1/4W
R203	1-249-441-11	CARBON 100K 5% 1/4W
R204	1-249-438-11	CARBON 56K 5% 1/4W
R205	1-249-487-11	CARBON 15K 5% 1/2W
R206	$\Delta$ 1-215-891-11	METAL OXIDE 680 5% 2W F
R207	1-249-431-11	CARBON 15K 5% 1/4W
R208	1-249-441-11	CARBON 100K 5% 1/4W
R258	1-249-441-11	CARBON 100K 5% 1/4W
R301	$\Delta$ 1-217-473-00	FUSIBLE 2.2 5% 1W F
R302	$\Delta$ 1-217-473-00	FUSIBLE 2.2 5% 1W F
R401	1-249-428-11	CARBON 8.2K 5% 1/4W
R402	1-249-441-11	CARBON 100K 5% 1/4W
R403	1-249-429-11	CARBON 10K 5% 1/4W
R404	1-249-423-11	CARBON 3.3K 5% 1/4W
R405	1-249-419-11	CARBON 1.5K 5% 1/4W
R406	1-249-429-11	CARBON 10K 5% 1/4W
R410	1-247-822-11	CARBON 430 5% 1/4W
R411	1-249-414-11	CARBON 560 5% 1/4W
R412	1-249-429-11	CARBON 10K 5% 1/4W
R451	1-249-428-11	CARBON 8.2K 5% 1/4W
R452	1-249-441-11	CARBON 100K 5% 1/4W
R453	1-249-429-11	CARBON 10K 5% 1/4W
R454	1-249-423-11	CARBON 3.3K 5% 1/4W
R455	1-249-419-11	CARBON 1.5K 5% 1/4W
R456	1-249-429-11	CARBON 10K 5% 1/4W
RT101	1-237-456-11	RES, ADJ, CARBON 1K (DC BIAS L)
RT151	1-237-456-11	RES, ADJ, CARBON 1K (DC BIAS R)
RY201	1-515-501-00	RELAY
S101	1-570-366-11	SWITCH, ROTARY SLIDE (SPEAKERS)
S301	1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)
S401	1-571-801-11	SWITCH, ROTARY (METER RANGE)
T301	$\Delta$ 1-449-732-11	(AEP,Italian)...TRANSFORMER, POWER
T301	$\Delta$ 1-449-731-11	(UK).....TRANSFORMER, POWER
TM101	1-537-193-11	TERMINAL BOARD (SP)(SPEAKER A/B)
TP01	*1-535-115-00	TERMINAL
TP51	*1-535-115-00	TERMINAL
TP91	*1-535-115-00	TERMINAL

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Sony Corporation  
Audio Group

9-953-878-11

— 18 —

English  
89H0247-1  
Printed in Japan  
©1989.8  
Published by A/V Engineering Service Dept.



# TC-V925E

## SERVICE MANUAL

*AEP Model  
UK Model*


TC-V925E is the  
cassette deck  
section in LBT-V925CD.



Model Name Using Similar Mechanism	TC-V901	
Tape Transport Mechanism Type	DECK A	TCM-170RA4
	DECK B	TCM-170RB10

### SPECIFICATIONS

Recording system	4-track, 2-channel stereo
Frequency response	DOLBY NR OFF (DIN) With TYPE IV cassette (SONY METAL-ES) 30 to 15,000 Hz $\pm 3$ dB With TYPE II cassette (Sony UX-S) 30 to 14,000 Hz $\pm 3$ dB With TYPE I cassette (Sony HF-S) 30 to 13,000 Hz $\pm 3$ dB
Wow and flutter	$\pm 0.2$ % (DIN)
AC outlet	1 unswitched, max. 100 W
Dimensions	355 $\times$ 133 $\times$ 308 mm (w/h/d) (14 $\times$ 5 $\frac{1}{4}$ $\times$ 12 $\frac{1}{8}$ inches) Incl. projecting parts and controls
Weight	Approx. 4.6 kg (10 lb 3 oz)

Dolby noise reduction manufactured under license from  
Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of  
Dolby Laboratories Licensing Corporation.



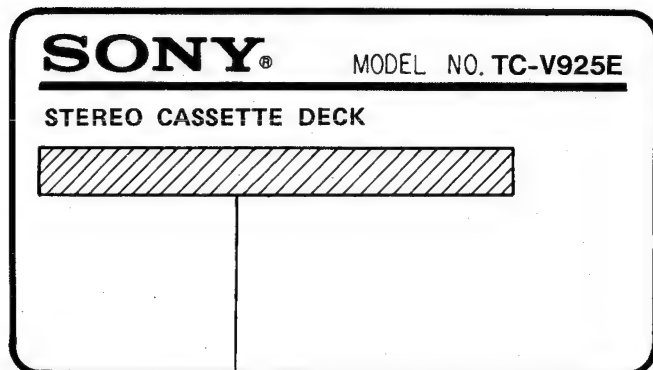
**STEREO CASSETTE DECK**  
**SONY®**

# SECTION 1 GENERAL

## TABLE OF CONTENTS

Section	Title	Page
Specifications	.....	1
Model Identification	.....	2
<b>1. GENERAL</b>		
Location and Function of Controls	.....	2
<b>2. DISASSEMBLY</b>	.....	3
<b>3. ADJUSTMENTS</b>		
3-1. Mechanical Adjustments	.....	5
3-2. Electrical Adjustments	.....	6
<b>4. DIAGRAMS</b>		
4-1. M50964-210SP (IC803)	.....	9
4-2. Printed Wiring Boards	.....	12
4-3. Schematic Diagram	.....	17
4-4. Schematic Diagram (HX-PRO Board)	.....	22
<b>5. EXPLODED VIEWS</b>	.....	24
<b>6. ELECTRICAL PARTS LIST</b>	.....	28

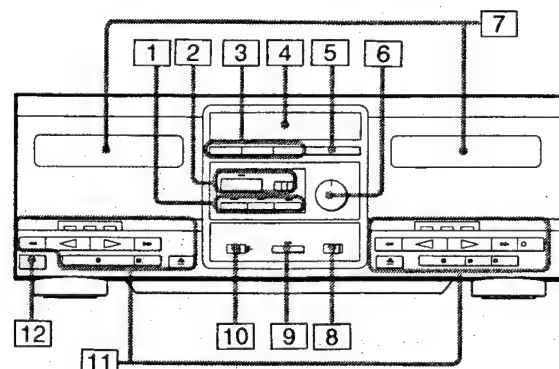
## MODEL IDENTIFICATION (Specification Label)



AEP, Italian model: AC 220V~50/60Hz 28W  
UK model: AC 240V~50/60Hz 28W

## SAFETY-RELATED COMPONENT WARNING!!

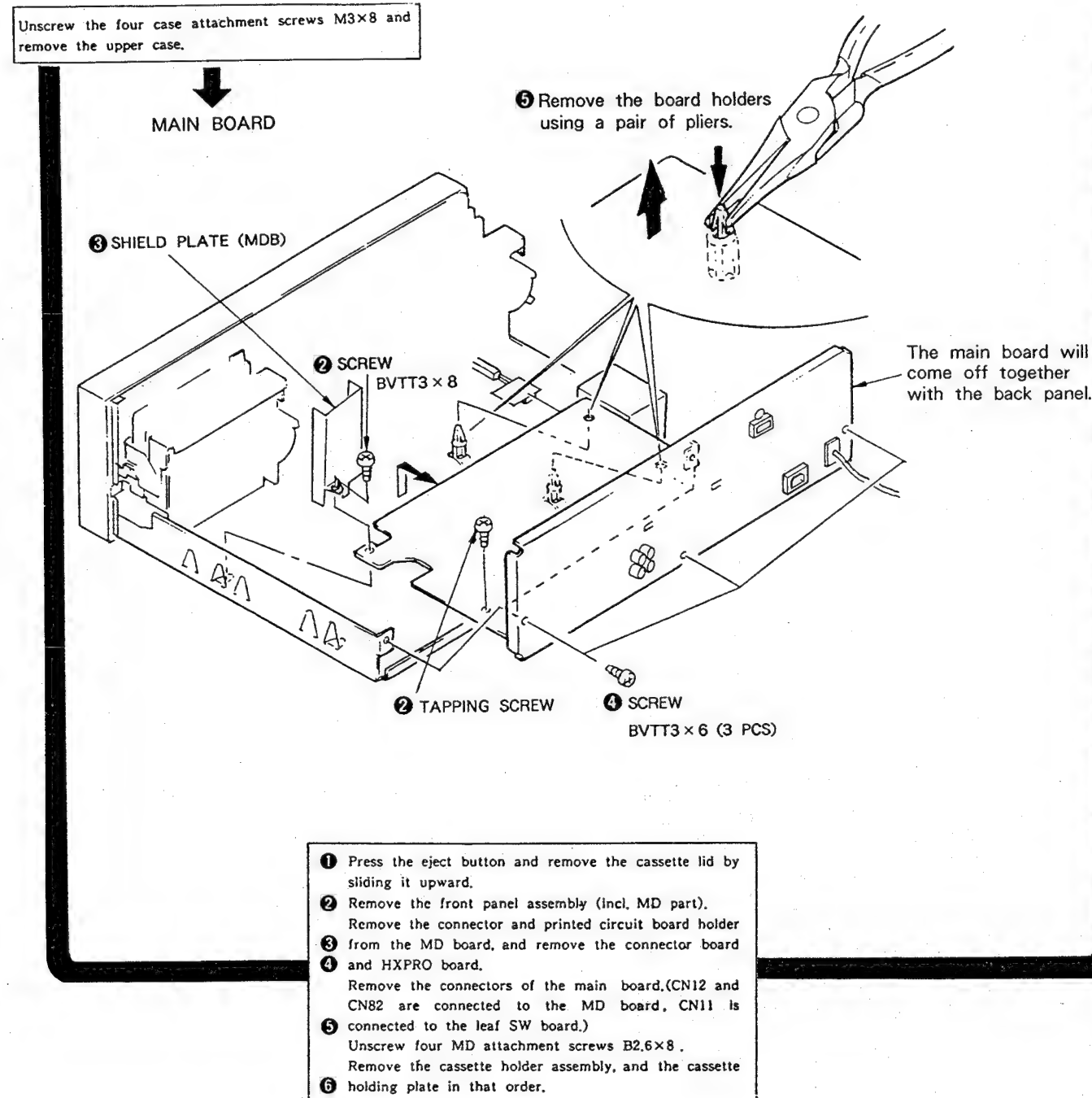
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



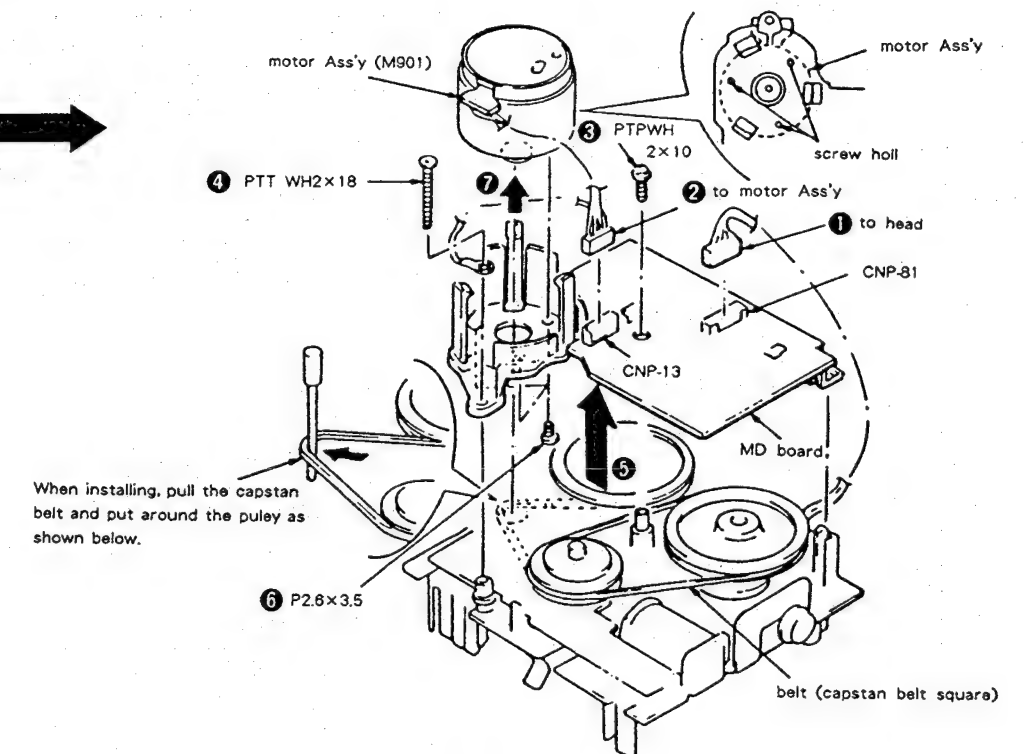
- 1** SYNCHRO (synchronized) DUBBING and AUTO (automatic) PAUSE buttons and indicators
- 2** AUTO CD SYNCHRO (automatic CD synchronization) button and mode selector
- 3** Counter setting buttons
- 4** Display window
- 5** CCLA (Computer Controlled Level Adjustment) button
- 6** REC (recording) LEVEL control
- 7** Cassette holders
- 8** DOLBY NR (Noise Reduction) switch
- 9** AMS (Automatic Music Sensor)/BLANK SKIP button
- 10** DIRECTION MODE selector
- 11** Tape operation buttons and direction mode indicators  
: Leftward fast winding, : Rightward fast winding,  
: Reverse play, : Forward play, : Stop, : PAUSE: Pause,  
: REC MUTE: Recording mute (deck B only),  
: REC: Recording (deck B only), : Eject
- 12** POWER switch

## SECTION 2 DISASSEMBLY

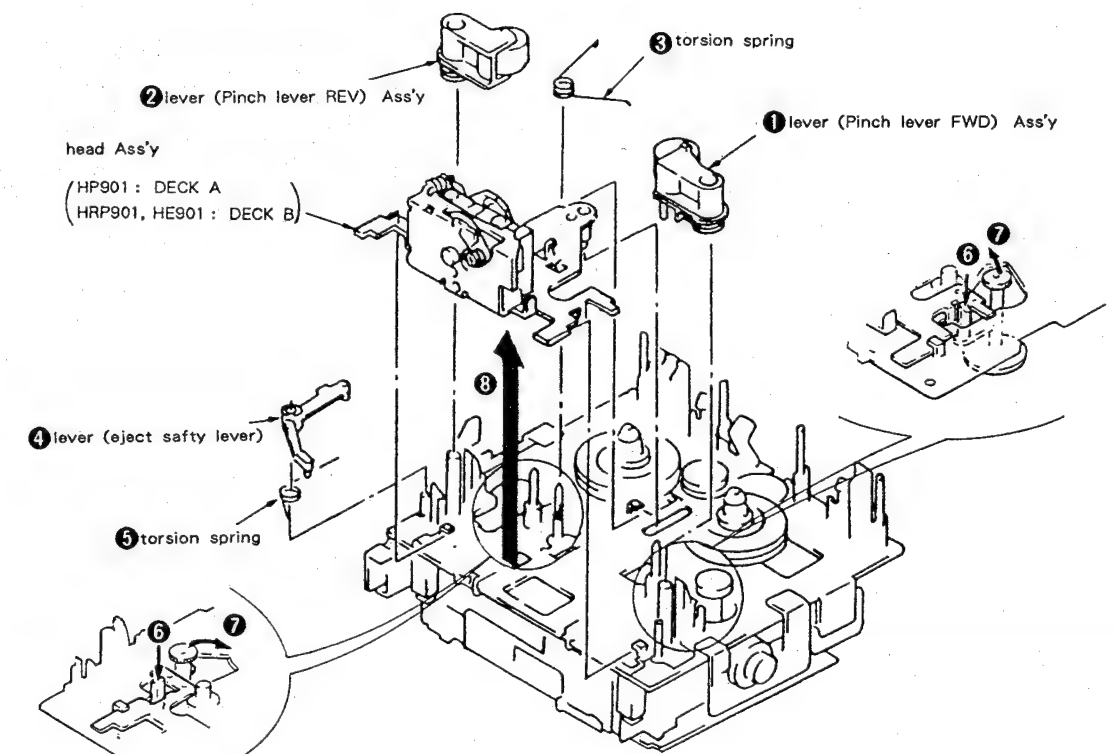
**Note:** Follow the disassembly procedure in the numerical order given.



### MOTOR Ass'y



### HEAD Ass'y



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENT

#### PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:  
record/playback head pinch roller  
erase head rubber belts  
capstan idler
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- The adjustments should be performed in the rated power supply voltage unless otherwise noted.

#### Torque Measurement

Torque	Torque Meter	Meter Reading
FWD	CQ-102C	27 to 75 g*cm (0.38 to 1.04 oz*inch)
FWD Back Tension	CQ-102C	1 to 10 g*cm (0.014 to 0.13 oz*inch)
REV	CQ-102RC	27 to 75 g*cm (0.38 to 1.04 oz*inch)
REV Back Tension	CQ-102RC	1 to 10 g*cm (0.014 to 0.13 oz*inch)
FF, REW	CQ-201B	95 to 165 g*cm (1.33 to 2.29 oz*inch)

### 3-2. ELECTRICAL ADJUSTMENTS

**Note:** The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording.

The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.

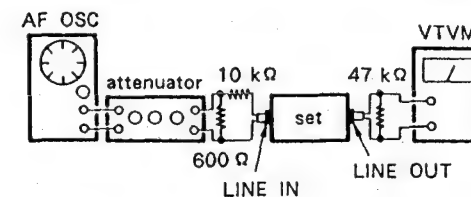
DOLBY NR switch : OFF

DIRECTION MODE switch :  $\Rightarrow$

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

#### — Record Mode —



#### • Standard Input Level

input terminal	LINE IN
source impedance	10 kΩ
input level	0.25 V ( - 10 dB)

#### • Standard Output Level

output terminal	LINE OUT
load impedance	47 kΩ
output level	0.44 V ( - 5 dB)

#### • Test tape

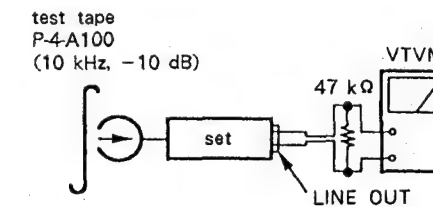
Type	Signal	User for
P-4-A100	10 kHz, - 10 dB	Azimuth Adjustment
P-4-L300	315 Hz, 0 dB	PB Level Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment

### Record/Playback Head Azimuth Adjustment

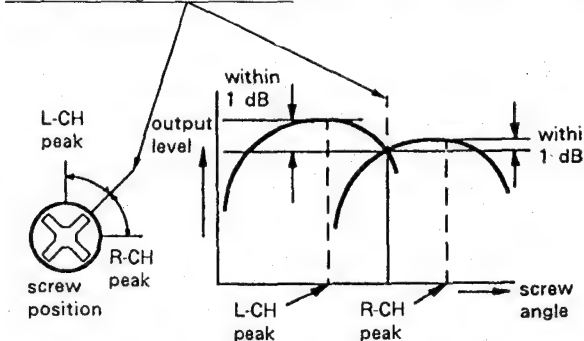
#### DECK A DECK B

#### Procedure:

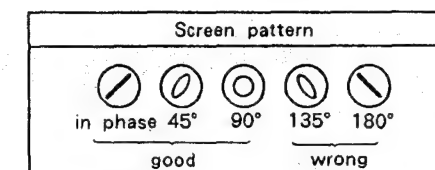
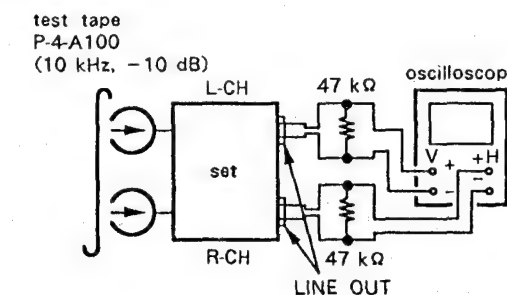
- Mode: FWD playback



- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

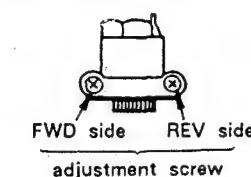


- Phase Check  
Mode: playback



- Set in the REV mode and repeat the step 1 - 3.
- After the adjustment, lock the screws with locking compound.

**Adjustment Location:** record/playback head

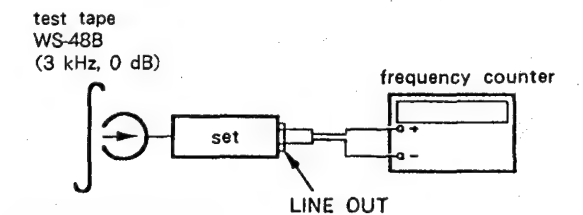


### Tape Speed Adjustment DECK A DECK B

Perform high speed adjustment before normal speed adjustment.

#### Procedure:

Mode: FWD playback



#### [High Speed Adjustment]

- Short test pin TP1 on main board.
- Put the set to FWD playback state.
- Press and keep on pressing HIGH SPEED DUBBING switch (S802 on FL board).
- On this time, adjust with the semi-fixed variable resistors (H) on the rear side of M901A (Deck A) and M901B (Deck B) so that the reading on the frequency counter becomes the adjust-ment limits.
- After adjustment, release the short on TP1.

#### [Normal Speed Adjustment]

- Put the set to FWD playback state.
- On this time, adjust with the semi-fixed variable resistors (L) on the rear side of M901A (Deck A) and M901B (Deck B) so that the reading on the frequency counter becomes the adjust-ment limits.

#### Adjustment Limits:

Speed	Frequency Counter
high	5,960 ± 60 Hz
normal	2,980 ± 30 Hz

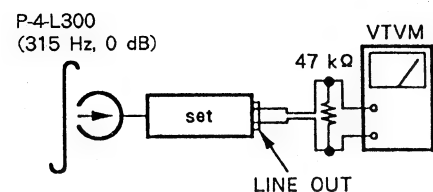
Frequency difference between the beginning and the end of the tape should be within 3%.

Frequency difference between Deck A and Deck B the beginning of the tape should be within 1.5%.

#### Adjustment Location:

Deck A: motor (M901A) rear side  
Deck B: motor (M901B) rear side

**Procedure:**  
Mode:playback



Adjust Deck A: RV41A (L-CH), RV61A (R-CH) and Deck B: RV41B (L-CH), RV61B (R-CH) so that the VTVM reading becomes the adjustment limits below.

**Adjustment Limits:**

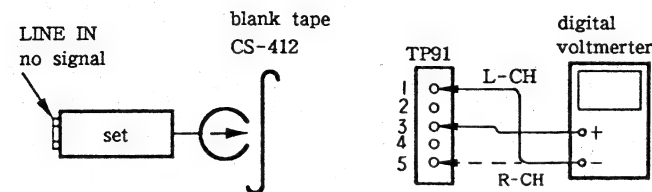
LINE OUT level:  $-5 \pm 1.5$  dB (0.37 – 0.51V)  
 Level difference between channels: less than 1 dB.  
 Check that the LINE OUT level does not change in playback mode while  
 changing the mode from playback to stop several times.

**Adjustment Location:** MD (A), B) board

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T51, T71), or DOLBY HX PRO IC (IC91).

**Procedure:**

( ): R-CH



1. Connect the oscilloscope to test point TP91.
2. Set RV42 (RV62) to mechanical center.
3. Set to FWD record mode.
4. Adjust T51 (T71) so that the digital voltmeter reading becomes 40 mV.

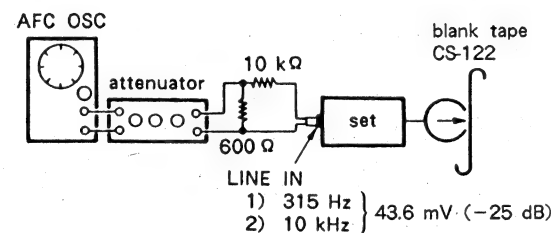
**Adjustment Location:** HX PRO board

**Setting:**

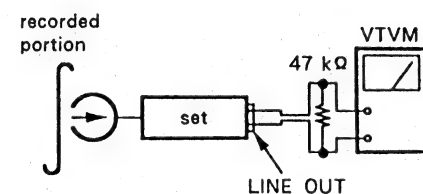
- REC LEVEL control: standard record (See page 5.)
- Short test pin TP1 on main board.

**Procedure:**

1. Mode: record



2. Mode: playback



Confirm that the 10 kHz playback output is  $0 \pm 0.5\text{dB}$  relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

3. After adjustment, release the short on TP1.

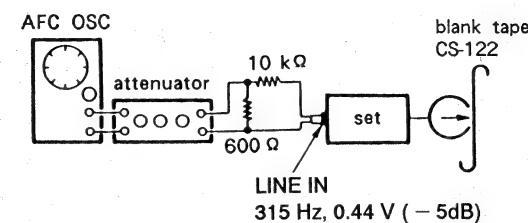
**Adjustment Location:** HX PRO board

**Setting:**

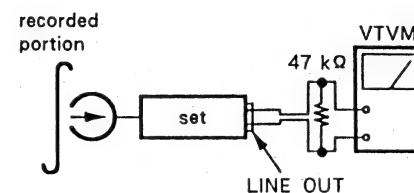
- REC LEVEL control: standard record (See page 5.)
- Short test pin TP1 on main board.

**Procedure:**

1. Mode: record



2. Mode: playback



3. Playback the signal recorded in step 1.  
Confirm that the signal level is within the specification below. If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat the step 1 and 2.
4. After adjustment, release the short on TP1.

**Specification:** LINE OUT level:  $-5 \pm 0.5$  dB  
(0.41 – 0.46 V)

**Adjustment Location:** main board  
(Component Side)

motor  
(Deck A : M901A)  
(Deck B : M901B)

normal speed adjusting  
semi-fixed variable  
resistor (H)

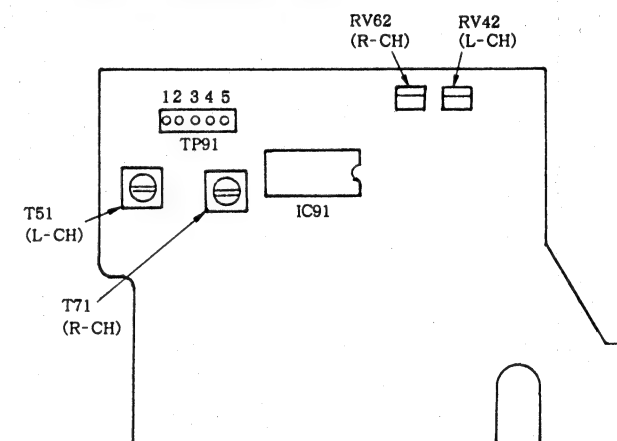
high speed adjusting  
semi-fixed variable  
resistor (L)

RV61  
(R-CH)

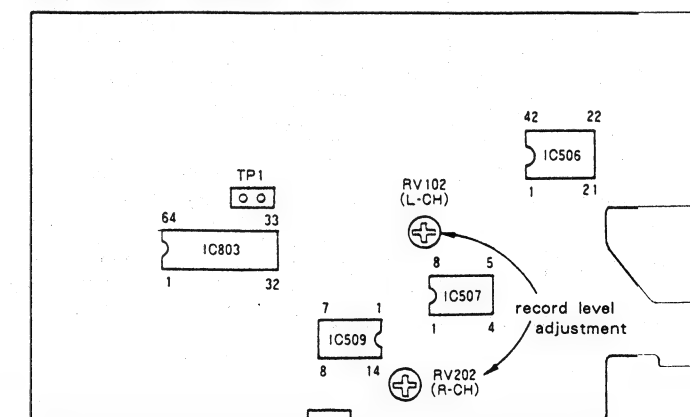
RV41  
(L-CH)

Deck A : MD-A board  
Deck B : MD-B board

HX PRO board (Component side)



MAIN board (component side)

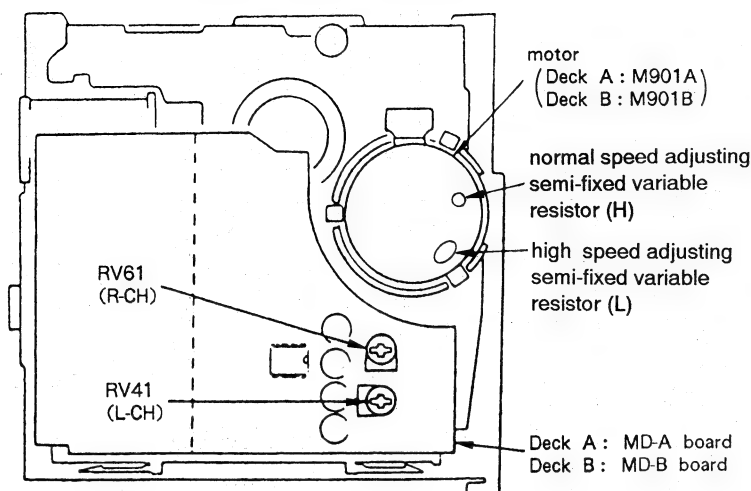


No.	PIN	NAME
1	V <sub>cc</sub>	
2	AV <sub>ss</sub>	
3	VREF	
4	D/A	
5	PWM	
6	P63	
7	P62	
8	P61	
9	P60	
10	AN7	
11	AN6	
12	AN5	
13	AN4	
14	AN3	
15	AN2	
16	P41	
17	P40	
18	P37	
19	P36	
20	P35	
21	P34	
22	P33	
23	P32/INT2	
24	P31	
25	P30	
26	INT1	
27	CN V <sub>ss</sub>	
28	RESET	
29	X IN	
30	X OUT	
31	φ	
32	V <sub>ss</sub>	
33	P57	
34	P56	
35	P55	
36	P54	
37	P53	
38	P52	
39	P51	A
40	P50	
41	P17	
42	P16	

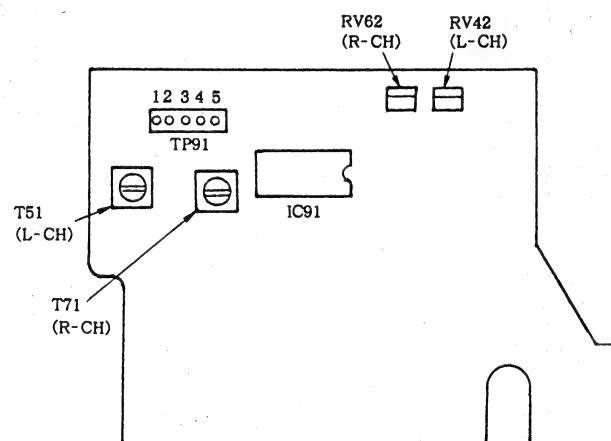


# SECTION 4 DIAGRAMS

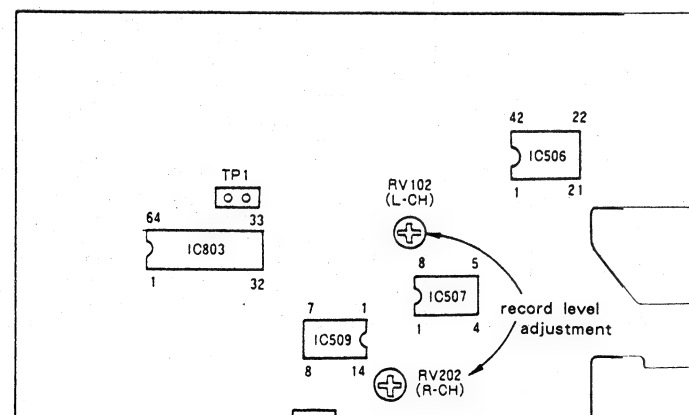
—Adjustment Parts Location Diagram—



HX PRO board (Component side)



MAIN board (component side)



4-1. M50964-210SP (IC803)

No.	PIN NAME	SIGNAL	I/O	FUNCTION
1	Vcc			Power supply
2	AVss			Ground
3	VREF			Power supply
4	D/A	Cμ OUT	O	Data output to counter microcomputer
5	PWM			Not used
6	P63	AMS	O	LED output (L:light on)
7	P62	A▶	O	LED output (L:light on)
8	P61	A◀	O	LED output (L:light on)
9	P60	A PLAY	O	LED output (L:light on)
10	AN7	Cμ IN	I	Data input from counter microcomputer
11	AN6			Not used
12	AN5	B HALF DET	I	Cassette half detection and erase proof tab detection for deck B
13	AN4	KEY Z	I	Input from operation switches
14	AN3	KEY Y	I	Input from operation switches
15	AN2	KEY X	I	Input from operation switches
16	P41	B▶	O	LED output (L:light on)
17	P40	B◀	O	LED output (L:light on)
18	P37	B PLAY	O	LED output (L:light on)
19	P36	B II	O	LED output (L:light on)
20	P35	B●RELAY	O	LED output (L:light on)
21	P34	NR B/C	O	Dolby NR B/C select
22	P33	NR ON/OFF	O	Dolby NR ON/OFF select
23	P32/INT2	AUB IN	I	AUDIO BUS input
24	P31	70/120	O	70μS playback equalizer select deck
25	P30	AUB OUT	O	AUDIO BUS output
26	INT1	AUB IN	I	AUDIO BUS reverse input
27	CN Vss			Ground
28	RESET		I	Reset signal input
29	X IN		I	4.00MHz oscillation signal input
30	X OUT		O	4.00MHz oscillation signal output
31	φ			Not used
32	Vss			Ground
33	P57	TEST	I	Test mode input
34	P56	DIR B	I	Deck B direction switch input
35	P55	B 70/120	I	Deck B 70/120μS switch input
36	P54	B SHUT	I	Deck B reel table rotation detect (the mechanism is shut off after one second with no signal change)
37	P53	A 70/120	I	Deck A 70/120μS switch input
38	P52	A SHUT	I	Deck A reel table rotation detect (the mechanism is shut off after one second with no signal change)
39	P51	A HALF DET	I	Cassette half detection for deck A
40	P50	AMS IN	I	AMS signal input
41	P17	M MUTE	O	Meter mute output (not used)
42	P16	L MUTE	O	Line mute output (L:muting)

No.	PIN NAME	SIGNAL	I/O	FUNCTION
43	P15	PASS	O	Pass amp select output
44	P14	REC/PB	O	REC/PB select output (L:record)
45	P13	AMS/BS	O	AMS/BS amp select output
46	P12	AMS A/B	O	AMS/BS amp deck A or deck B select (L:deck B)
47	P11	SEL A/B	O	AMS/BS amp deck A or deck B select (L:deck B)
48	P10	BIAS	O	Deck B record bias select
49	P07	REPLAY	O	REC/PB switching relay output
50	P06	B PM	O	Output to hold deck B solenoid
51	P05	B KICK	O	Output to kick deck B solenoid
52	P04	A PM	O	Output to hold deck A solenoid
53	P03	A KICK	O	Output to kick deck A solenoid
54	P02	BM H/L	O	Deck B capstan motor high speed/normal speed select (H: high speed dubbing or FF/REW)
55	P01	AM H/L	O	Deck A capstan motor high speed/normal speed select (H: high speed dubbing or FF/REW)
56	P00	M ON/OFF	O	Capstan motor ON/OFF output (H:STOP)
57	P27	B R MUTE	O	Deck B record mute signal output (H:muting)
58	P26	35μSEC	O	Deck A is set to L at 70μsec during high speed dubbing.
59	P25	AP LED	O	LED output (L:light on)
60	P24	DUB H	O	LED output (L:light on)
61	P23	DUB N	O	LED output (L:light on)
62	P22	CD DUB	O	LED output (L:light on)
63	P21	A II	O	LED output (L:light on)
64	P20	J600/J700	I	Terminal of version setting (this set is H)

## • Test Mode

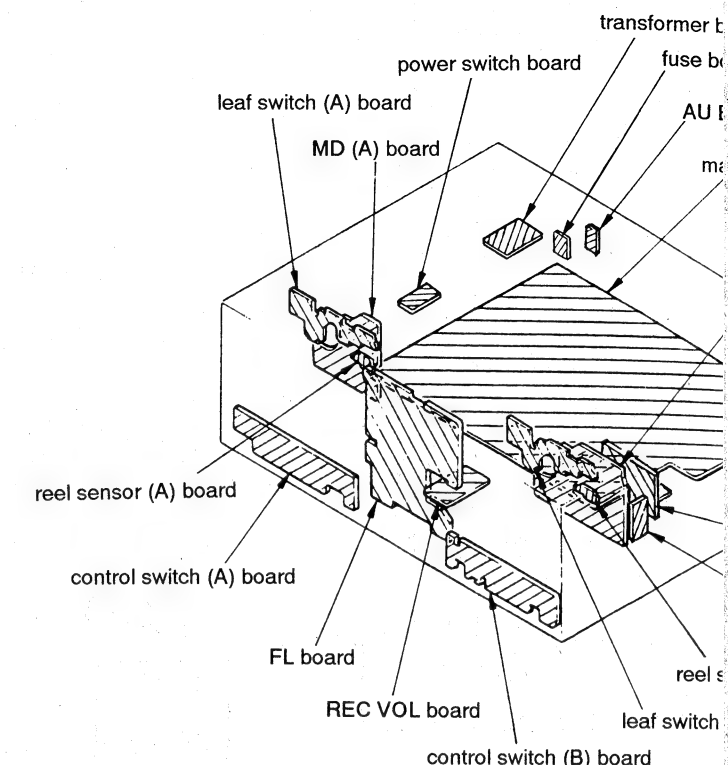
When making pin ③ of IC803 low (connect TP1 to ground with jumper wire), following function operates.

- Source monitor  
Release the line mute while recording.
- High speed playback  
On playing back, while pressing HIGH SPEED (DUBBING) button, high speed playback operates.
- Record memory stop  
Using DIRECTION MODE switch  $\rightleftarrows$ , returns to the recording start point and stops or plays.
- LED indication of slide switch  
When making Deck B pause, LED indicates the positions of DIRECTION MODE switch and (AUTO CD SYNCRO) MODE switch.

Switch	Position	LED
DIRECTION MODE	$\rightleftarrows$	Deck A ◀ Deck A PLAY Deck A ▶
	RELAY	
MODE	NORM	Deck B ◀ Deck B PLAY Deck B ▶
	FADE ERASE	

- AGC gain check  
When setting DIRECTION MODE switch to  $\rightleftarrows$  and recording, AGC gain becomes maximum.

## • Circuit Boards Location



## • Semiconductor Lead Layouts

DTC143TS  
2SA1175-HFE  
2SA1345  
2SA1348  
2SC3402



2SC2785-HFE



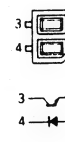
2SB1187-F  
2SD1761E



2SB1014



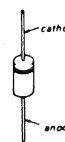
GP2S09-C  
SPS-314B



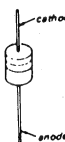
2SB1013  
2SC945P  
2SD1387



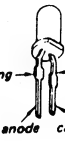
US1060  
1SS132  
10E2N



HZS6A11  
UZL-6L  
1SS120

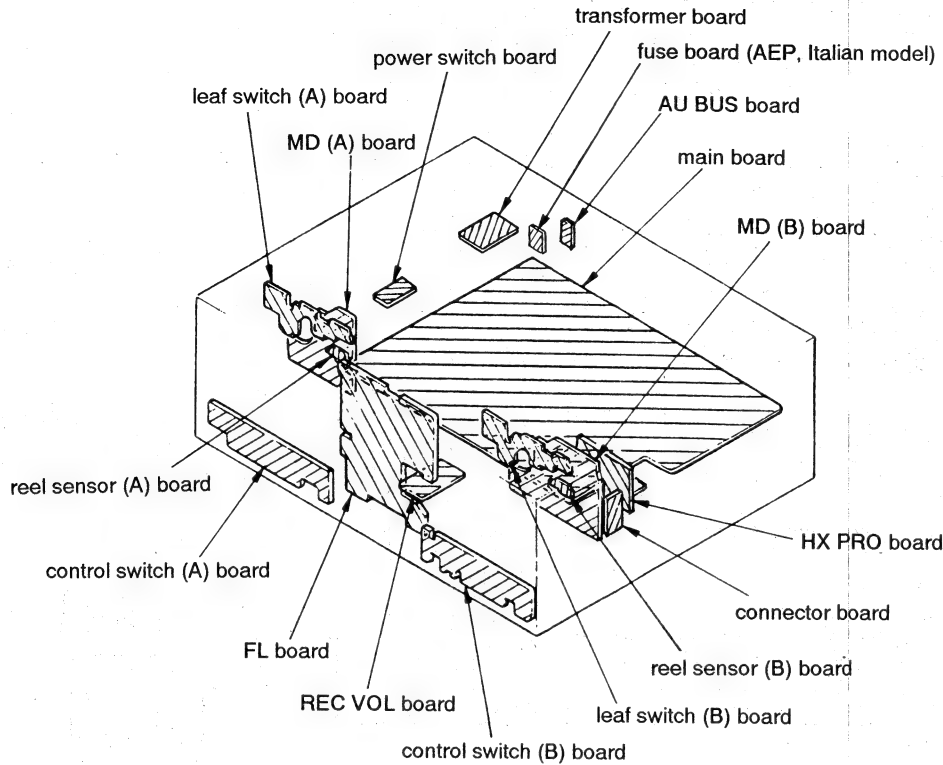


SEL2210  
SEL2810

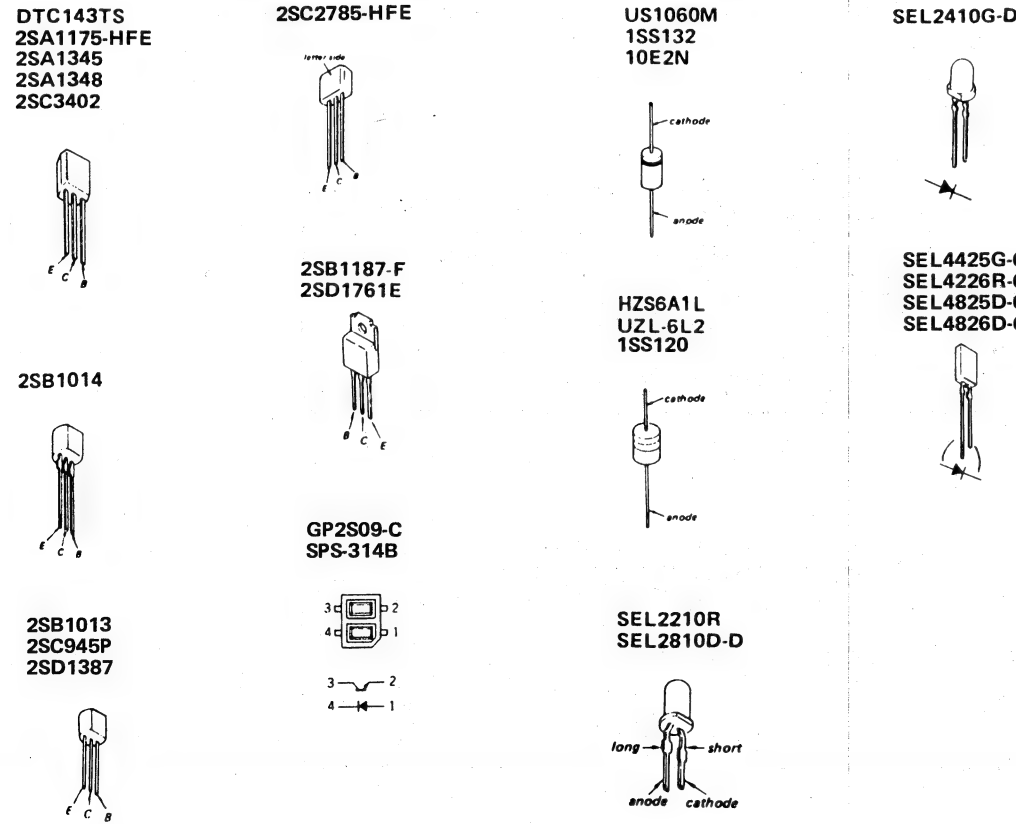


I/O	FUNCTION
O	Pass amp select output
O	REC/PB select output (L:record)
O	AMS/BS amp select output
O	AMS/BS amp deck A or deck B select (L:deck B)
O	AMS/BS amp deck A or deck B select (L:deck B)
O	Deck B record bias select
O	REC/PB switching relay output
O	Output to hold deck B solenoid
O	Output to kick deck B solenoid
O	Output to hold deck A solenoid
O	Output to kick deck A solenoid
O	Deck B capstan motor high speed/normal speed select(H: high speed dubbing or FF/REW)
O	Deck A capstan motor high speed/normal speed select(H: high speed dubbing or FF/REW)
O	Capstan motor ON/OFF output (H:STOP)
O	Deck B record mute signal output (H:muteing)
O	Deck A is set to L at 70μsec during high speed dubbing.
O	LED output (L:light on)
O	LED output (L:light on)
O	LED output (L:light on)
O	LED output (L:light on)
I	Treminal of version setting (this set is H)

Circuit Boards Location



Semiconductor Lead Layouts



B low (connect TP1 to ground with jumper  
tes.

e recording.

pressing HIGH SPEED (DUBBING) button,  
tes.

DE switch  $\rightleftarrows$ , returns to the recording start

itch  
pause, LED indicates the positions of  
itch and (AUTO CD SYNCRO) MODE

Position	LED
$\rightleftarrows$ RELAY	Deck A ◀ Deck A PLAY Deck A ▶
NORM FADE ERASE	Deck B ◀ Deck B PLAY Deck B ▶

N MODE switch to  $\rightleftarrows$  and recording, AGC

Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$   
50 WV or less are not indicated except for electrolytics  
and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}$  W or less unless otherwise  
specified.
- Components for right channel have same values as for left  
channel. Reference numbers are coded from
- $\triangle$  : internal component.
- $\text{---}\text{---}\text{---}$  : fusible resistor.

Note: The components identified by mark  $\triangle$  or dotted line  
with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

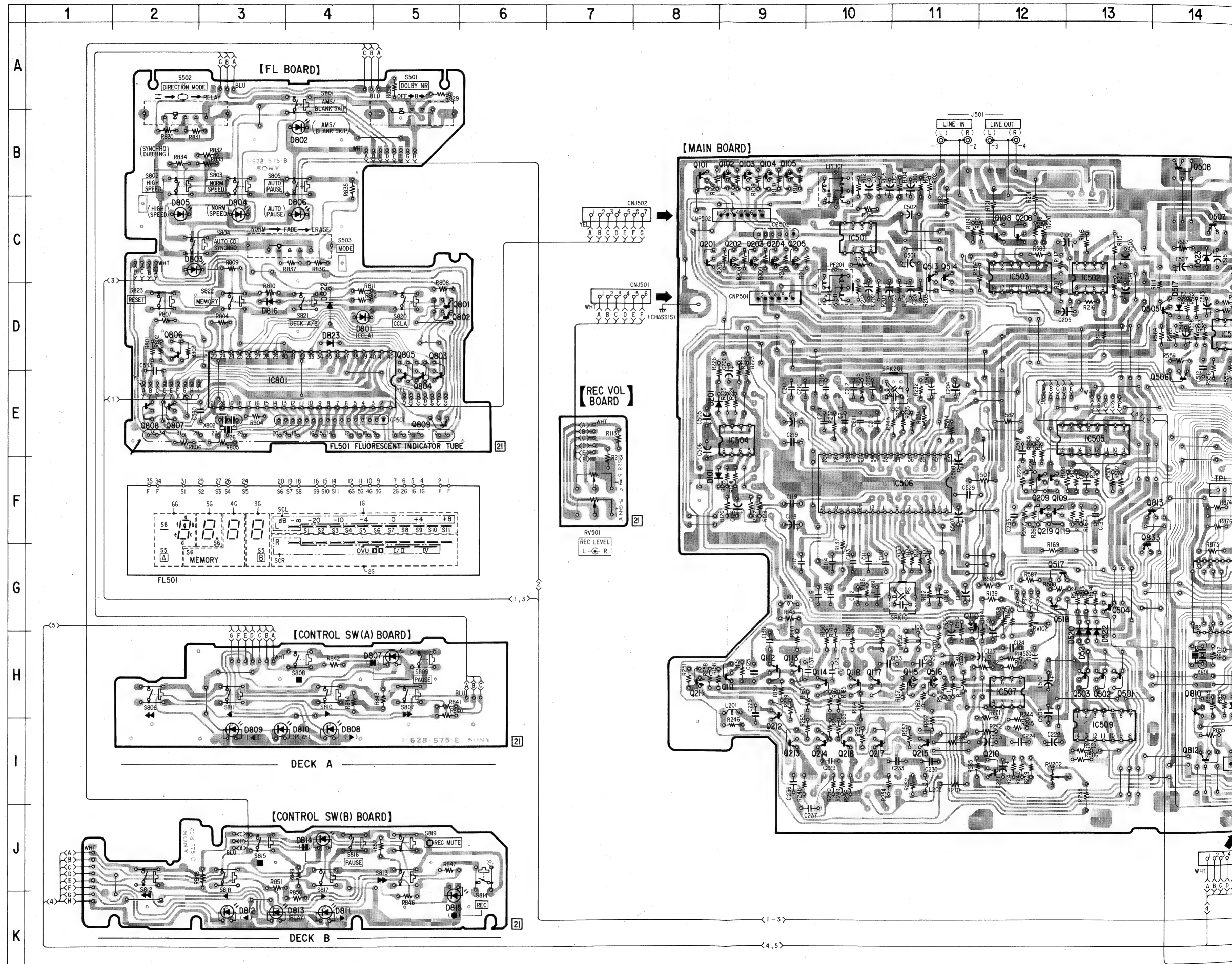
- $\text{B+}$  : B + Line.
- $\text{B-}$  : B - Line.
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground  
under no-signal conditions.  
no mark : STOP  
( ) : Normal speed dubbing  
( ( ) ) : High speed dubbing  
▶ : FWD ◀ : REV ■ : STOP  
▶▶ : FF ◀◀ : REW ● : REC
- Voltages are taken with a VOM (input impedance 10 M $\Omega$ ).  
Voltage variations may be noted due to normal production  
tolerances.
- Signal path.  
 $\Sigma$  : PB (DECK A)  
 $\square$  : PB (DECK B)  
 $\square$  : REC (DECK B)

Note on Printed Wiring Boards:

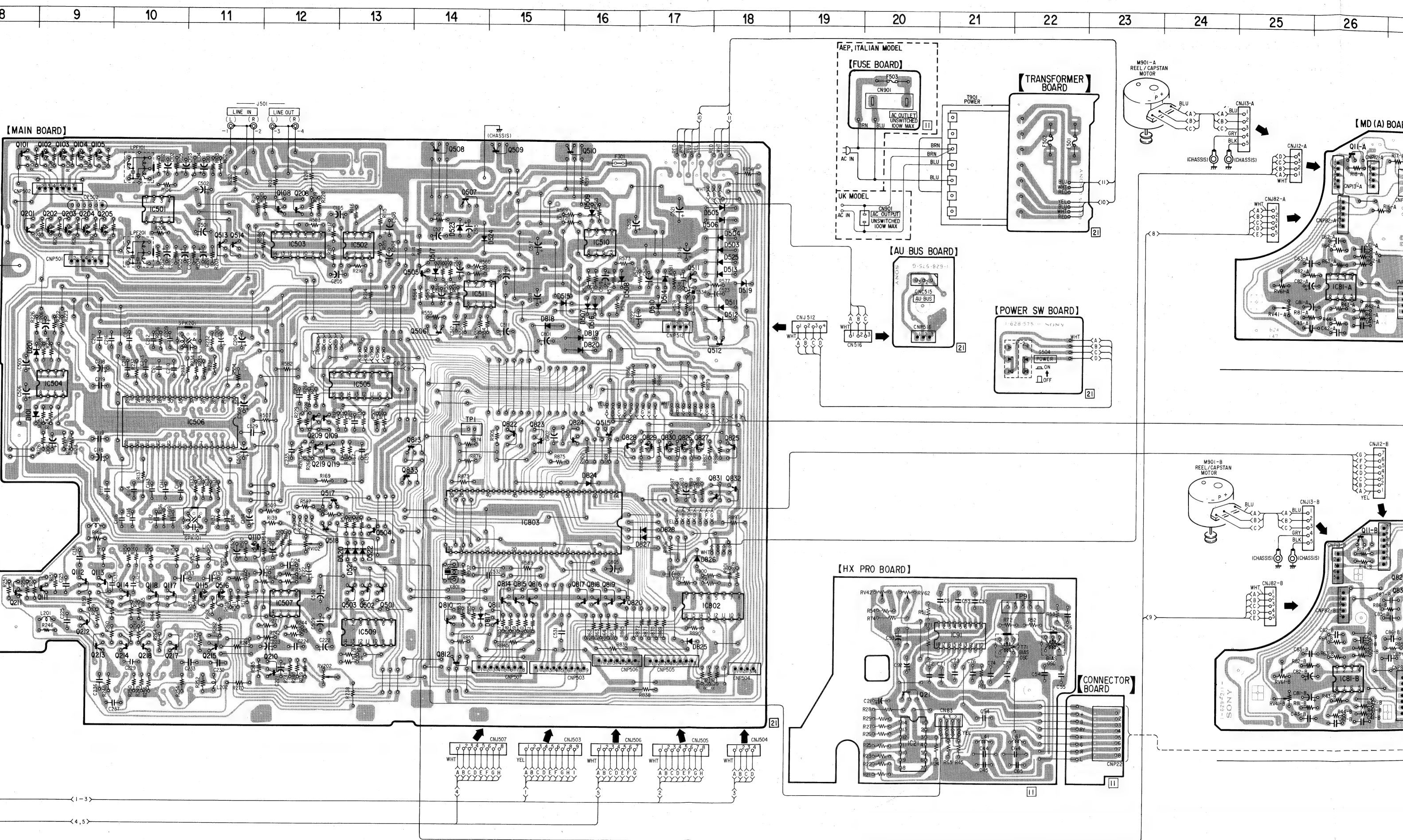
- $\circ$  : parts extracted from the component side.
- $\bullet$  : parts extracted from the conductor side.
- $\square$  : indicates side identified with part number.

## • Semiconductor Location

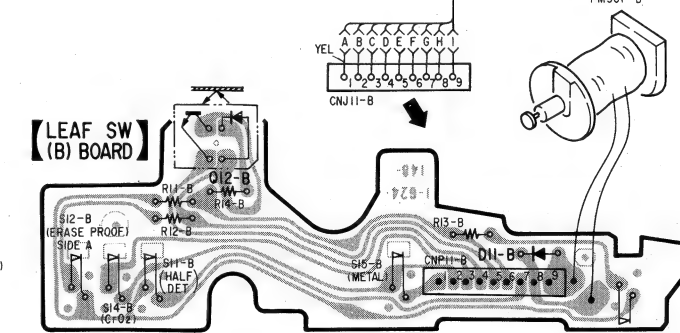
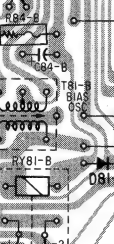
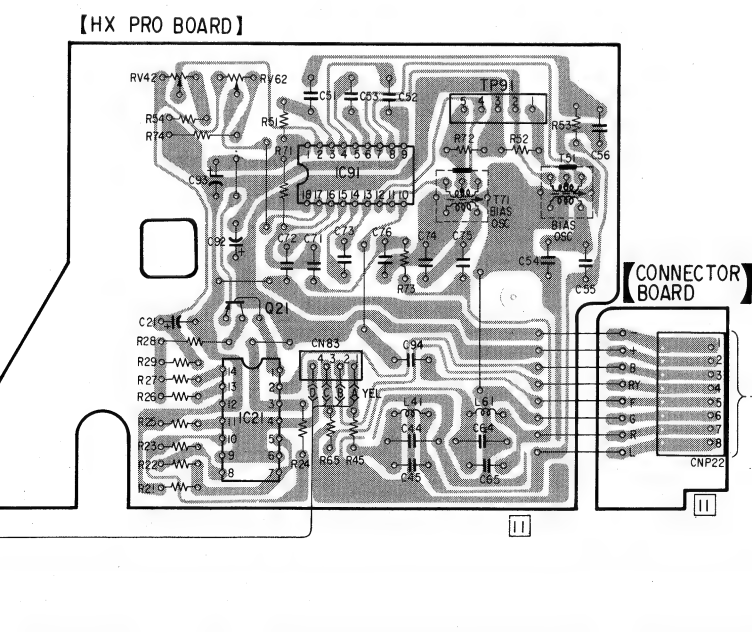
Ref. No.	Location	Ref. No.	Location
D11-A	D-33	Q101	B-8
D11-B	I-33	Q102	B-9
D81-B	I-28	Q103	B-9
D101	F-9	Q104	B-9
D201	E-9	Q105	B-9
D503	C-18	Q108	C-12
D504	C-18	Q109	F-12
D505	C-18	Q110	H-11
D506	C-18	Q111	H-9
D507	D-16	Q112	H-9
D508	D-16	Q113	H-9
D509	C-16	Q114	H-10
D510	D-17	Q115	H-11
D511	D-18	Q117	H-10
D512	D-18	Q118	H-10
D513	D-18	Q119	F-12
D514	D-17	Q201	C-8
D515	D-16	Q202	C-9
D516	D-16	Q203	C-9
D517	D-14	Q204	C-9
D519	D-18	Q205	C-9
D520	H-13	Q208	C-12
D521	H-13	Q209	F-12
D522	H-13	Q210	I-12
D523	C-14	Q211	H-8
D524	C-15	Q212	I-9
D525	D-18	Q213	I-9
D801	D-4	Q214	I-10
D802	B-4	Q215	I-11
D803	C-2	Q217	I-10
D804	C-3	Q218	I-10
D805	C-2	Q219	F-12
D806	C-4	Q501	H-13
D807	H-5	Q502	H-13
D808	I-4	Q503	H-13
D809	I-3	Q504	G-13
D810	I-3	Q505	D-14
D811	K-4	Q506	E-14
D812	K-3	Q507	C-14
D813	K-3	Q508	B-14
D814	J-4	Q509	B-15
D815	K-5	Q510	B-16
D816	D-3	Q511	D-17
D817	H-14	Q512	E-18
D818	E-15	Q513	C-11
D819	E-16	Q514	C-11
D820	E-16	Q515	F-16
D822	D-4	Q516	H-11
D823	D-4	Q517	G-12
D824	G-16	Q518	G-12
D825	I-17	Q801	D-5
D826	H-18	Q802	D-5
D827	G-17	Q803	E-5
D828	G-17	Q804	E-5
		Q805	E-5
		Q806	D-2
IC21	J-20	Q807	E-2
IC81-A	D-26	Q808	E-2
IC81-B	I-26	Q809	E-5
IC91	I-21	Q810	H-14
IC501	C-10	Q811	H-15
IC502	C-13	Q812	I-14
IC503	C-12	Q813	F-14
IC504	E-9	Q814	H-15
IC505	E-13	Q815	H-15
IC506	F-11	Q816	H-15
IC507	H-12	Q817	H-16
IC509	I-13	Q818	H-16
IC510	C-16	Q819	H-16
IC511	D-14	Q820	H-16
IC801	E-3	Q822	F-15
IC802	H-18	Q823	F-15
IC803	G-15	Q824	F-16
		Q825	F-18
Q11-A	B-26	Q826	F-17
Q11-B	G-26	Q827	F-17
Q12-A	D-31	Q828	F-16
Q12-B	I-31	Q829	F-17
Q14-A	B-30	Q830	F-17
Q14-B	G-31	Q831	G-18
Q21	J-20	Q832	G-18
Q81-B	G-27	Q833	G-14
Q82-B	H-27		
Q83-B	H-27		



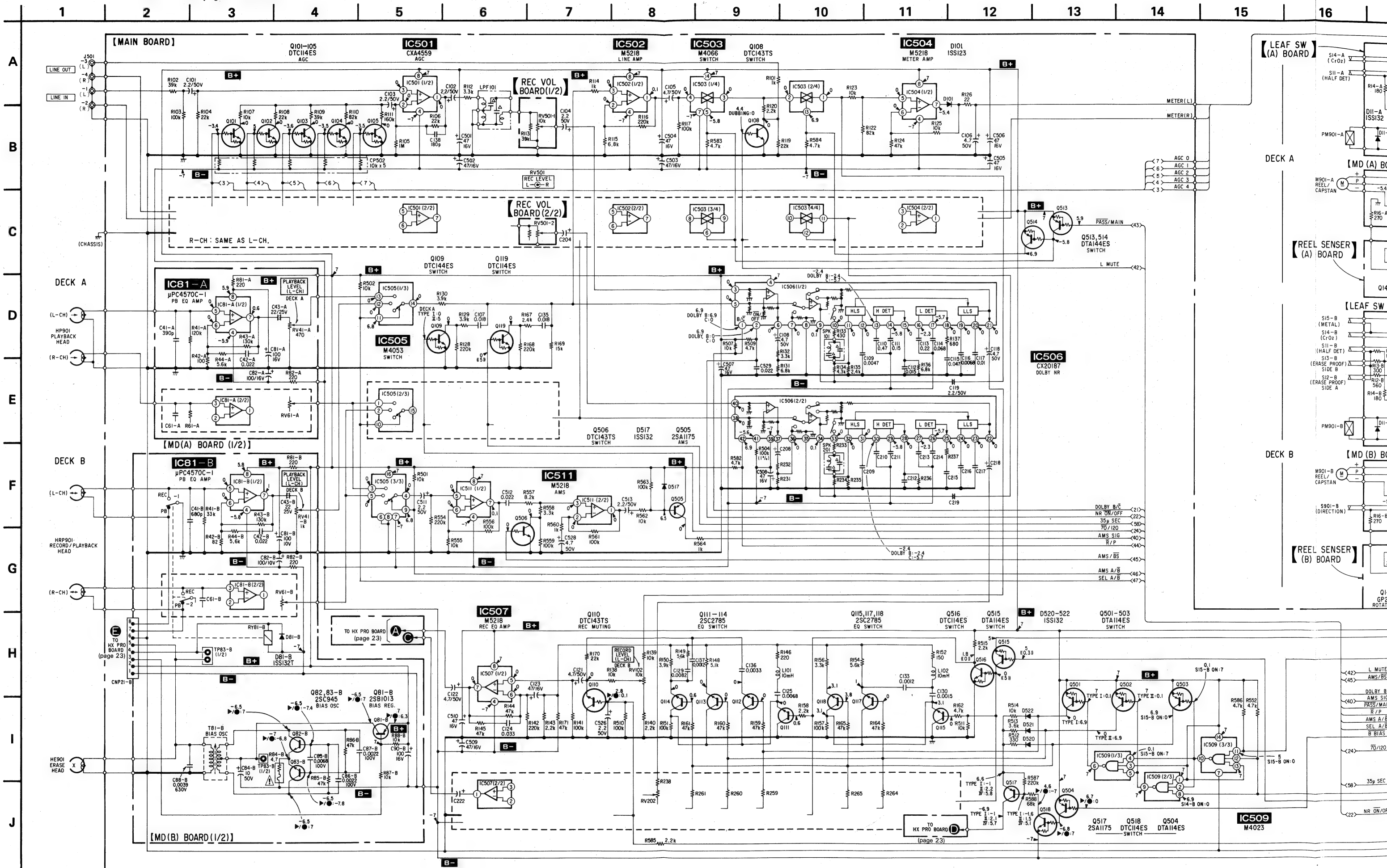






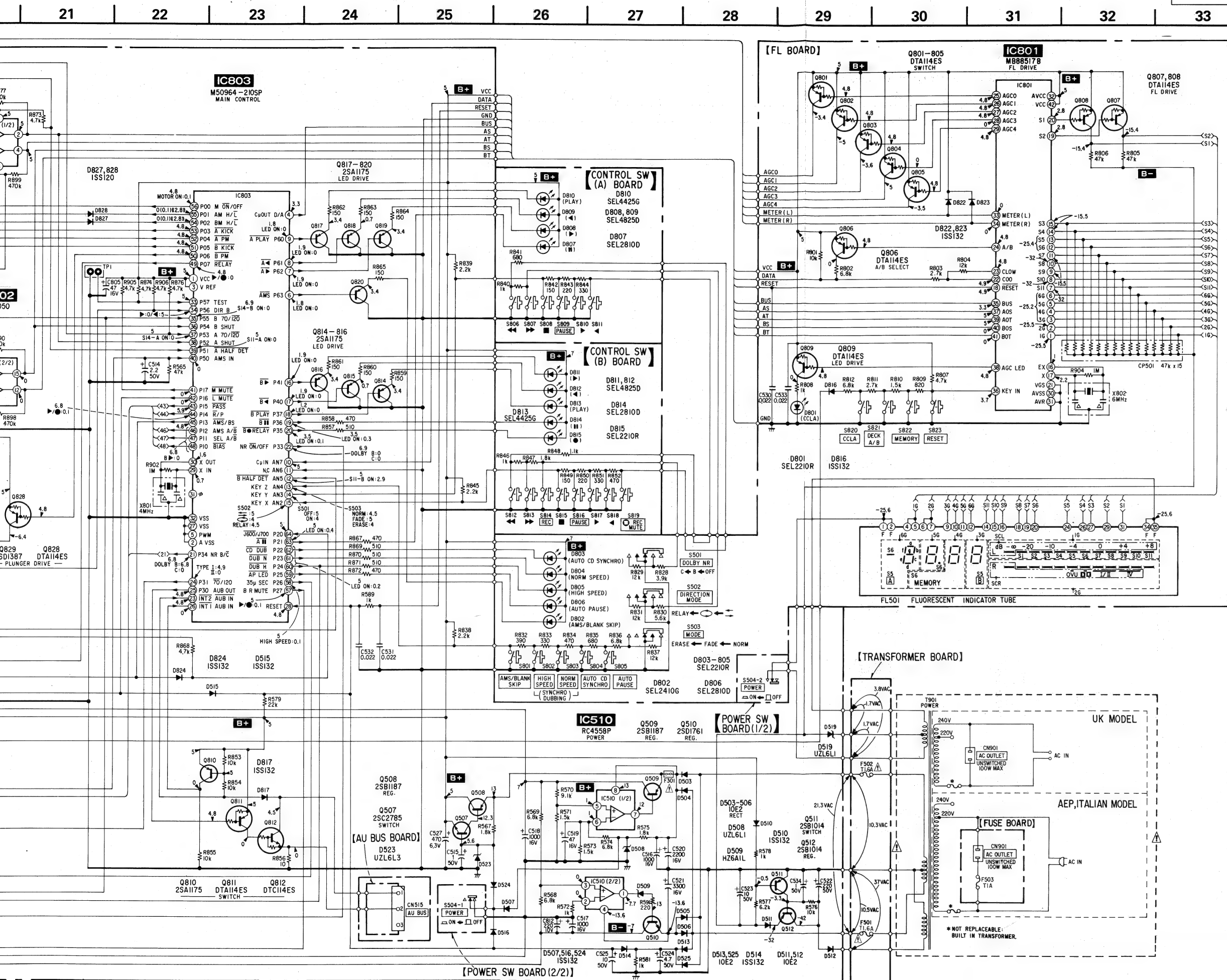


**DECK B**





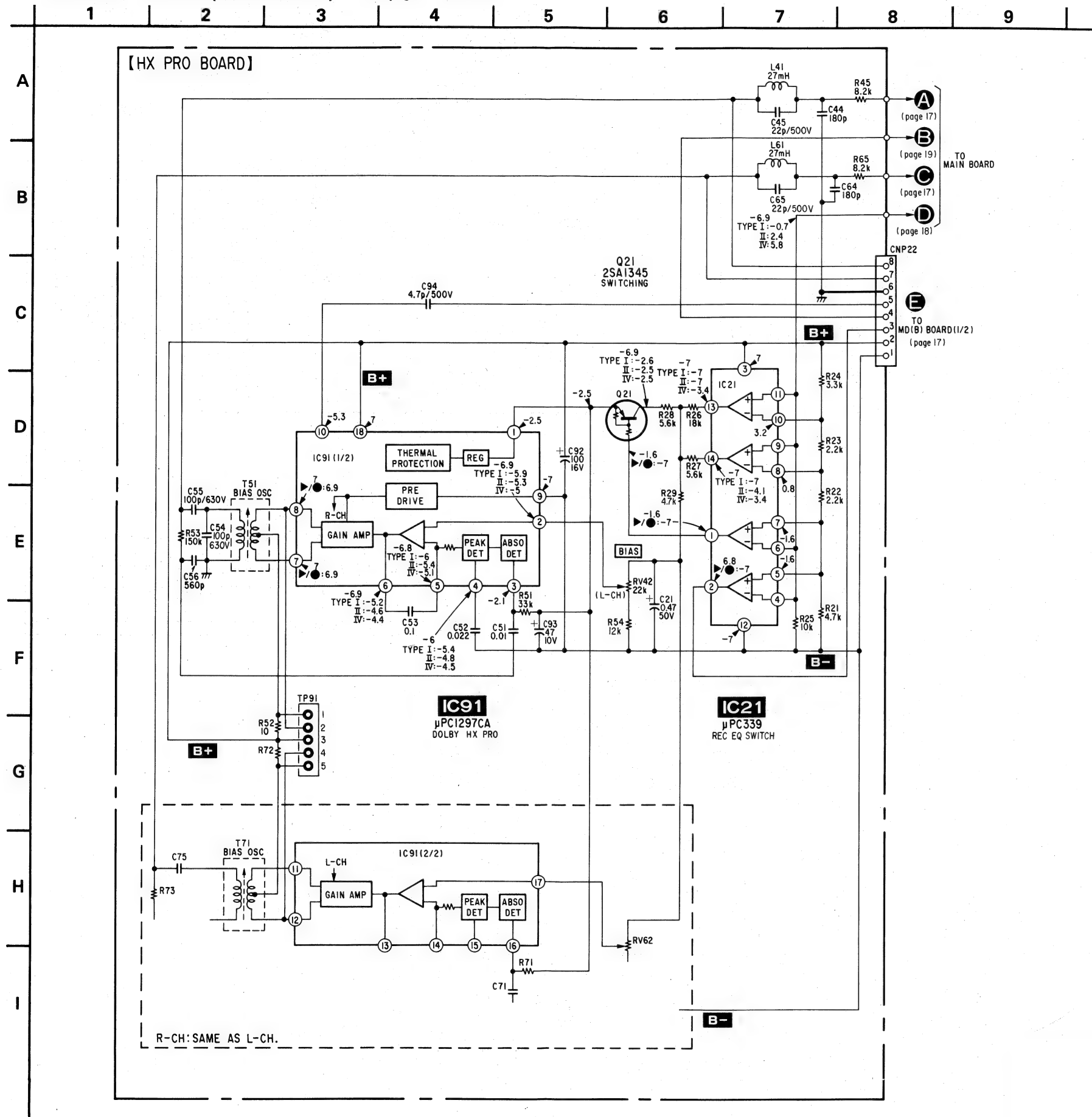






# SECTION 5 EXPLODED VIEWS

4-4. SCHEMATIC DIAGRAM (HX PRO BOARD) - See page 11 for notes.



## NOTE:

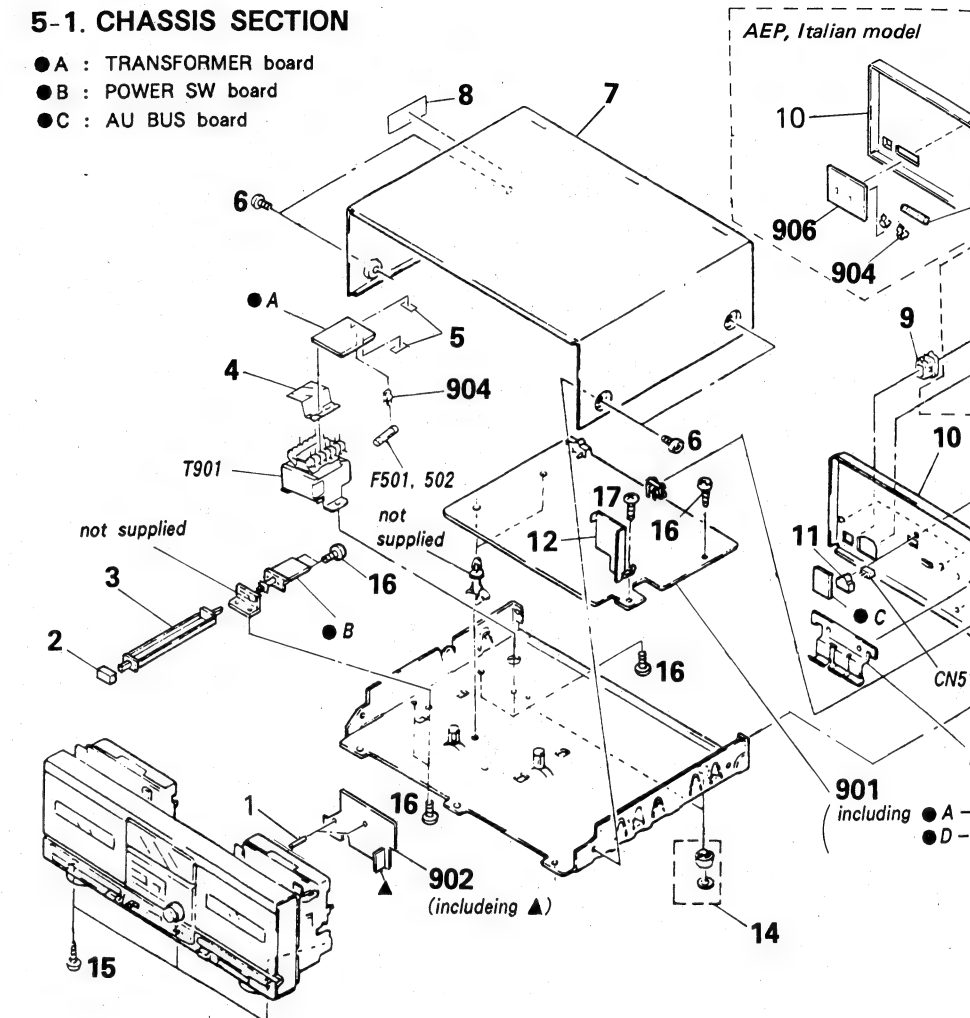
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:  
(RED) ... KNOB, BALANCE (WHITE)

↑ Cabinet's Color      ↑ Parts Color

## 5-1. CHASSIS SECTION

- A : TRANSFORMER board
- B : POWER SW board
- C : AU BUS board



Ref.No	Part No.	Description	Remark
1	*3-682-419-21	HOLDER, P.C.B	
2	4-922-903-01	BUTTON (POWER)	
3	*3-350-114-01	LEVER (POWER SW)	
4	*3-337-136-01	COVER, TRANSFORMER SAFETY	
5	*3-701-947-13	LABEL (T1.6A), FUSE	
6	3-704-366-01	SCREW (CASE) (M3X8)	
7	4-919-379-11	CASE	
8	3-703-079-21	(UK)... LABEL, CAUTION (BACK)	
9	*3-703-244-00	BUSHING (2104), CORD	
10	*3-350-131-41	(AEP, Italian)... PANEL, BACK	
11	3-350-131-51	(UK)... PANEL, BACK	
12	3-332-819-01	HOLDER CONNECTOR	
13	*3-350-123-01	PLATE (MDB), SHIELD	
14	*3-337-402-01	BAND, BINDING	
15	X-4917-254-1	FOOT ASSY	
16	7-682-547-09	SCREW +BVTT 3X6 (S)	
17	7-682-547-04	SCREW +BVTT 3X6 (S)	

Ref.No	Part No.	Description	Remark
17	7-685-646-79	SCREW +BVTT 3X6 (S)	
18	7-685-533-11	SCREW +BVTT 3X6 (S)	
19	7-621-849-00	SCREW +BVTT 3X6 (S)	
901	*A-2006-125-A	MO	
902	1-630-423-11	PC	
904	1-533-162-00	HO	
905	▲1-555-750-00	(AE)	
	▲1-556-562-00	(UH)	
906	*1-626-652-11	(AE)	
CN515	*1-565-562-11	CO	
CN901	▲1-526-751-00	(UH)	
	▲1-526-794-11	(AI)	
F501	▲1-532-259-00	FU	
F502	▲1-532-259-00	FU	
F503	▲1-532-078-00	(AE)	
T901	▲1-449-460-11	TR	

SECTION 5  
EXPLODED VIEWS

NOTE:

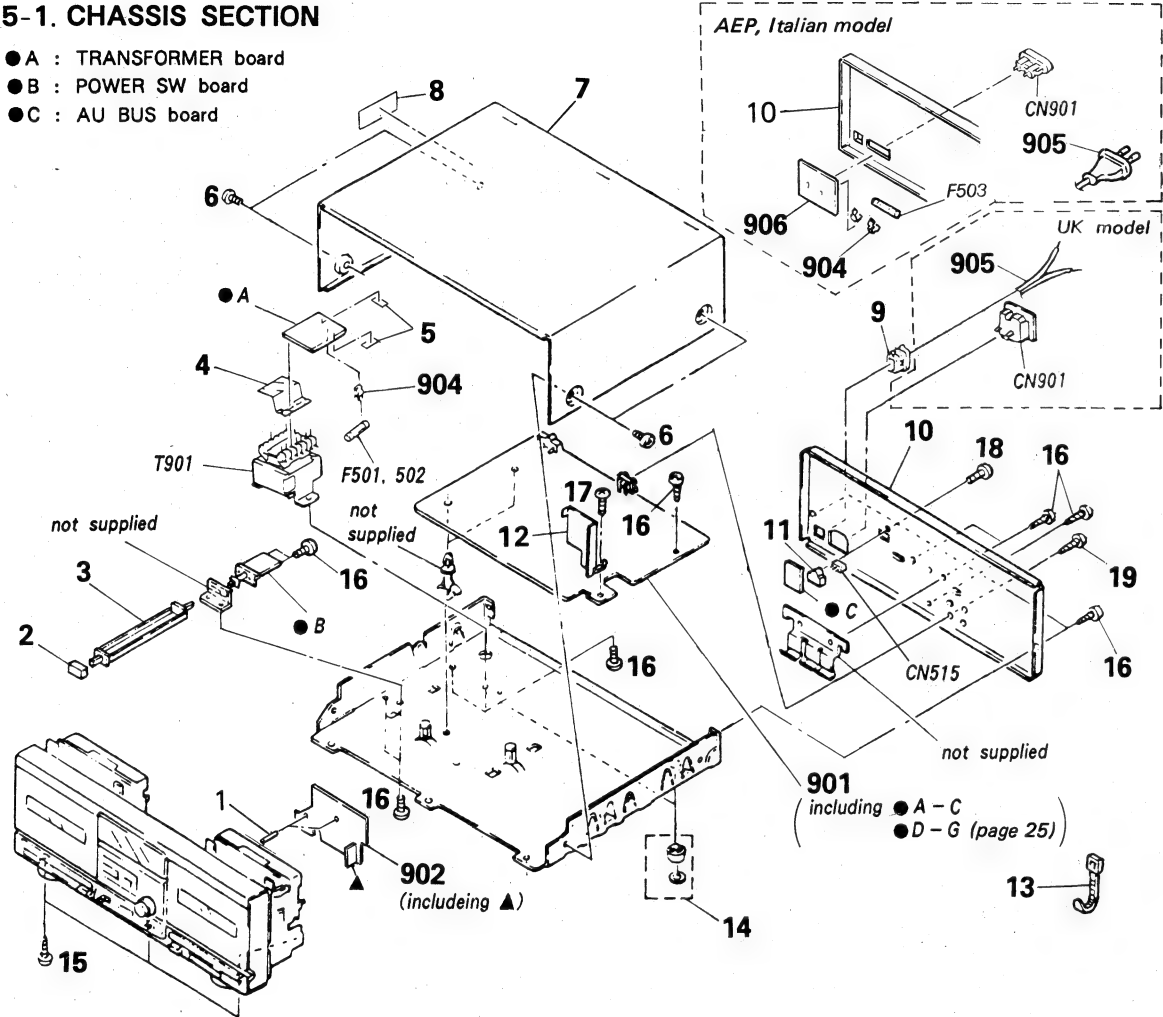
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑                      ↑  
Cabinet's Color      Parts Color

The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

5-1. CHASSIS SECTION

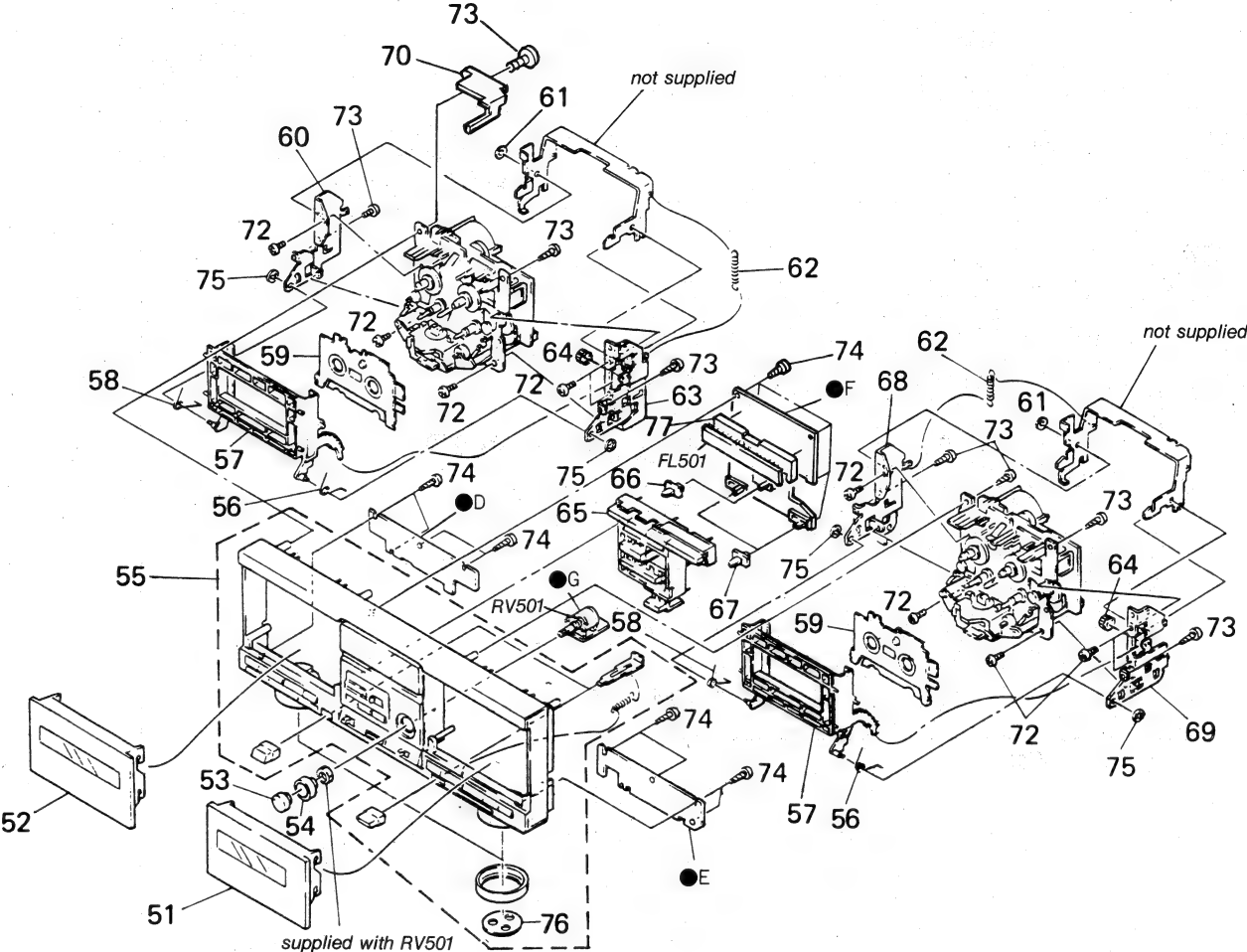
- A : TRANSFORMER board
- B : POWER SW board
- C : AU BUS board



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
1	*3-682-419-21	HOLDER, P.C.B		17	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
2	4-922-903-01	BUTTON (POWER)		18	7-685-533-11	SCREW +BTP 2.6X6 TYPE2 N-S	
3	*3-350-114-01	LEVER (POWER SW)		19	7-621-849-00	SCREW, TAPPING	
4	*3-337-136-01	COVER, TRANSFORMER SAFETY		901	*A-2006-125-A	MOUNTED PCB, AUDIO	
5	*3-701-947-13	LABEL (T1.6A), FUSE		902	1-630-423-11	PC BOARD, HX PRO	
6	3-704-366-01	SCREW (CASE) (M3X8)		904	1-533-162-00	HOLDER, FUSE	
7	4-919-379-11	CASE		905	▲1-555-750-00	(AEP, Italian)...CORD, POWER	
8	3-703-079-21	(UK)...LABEL, CAUTION (BACK)			▲1-556-562-00	(UK)...CORD, POWER	
9	*3-703-244-00	BUSHING (2104), CORD		906	*1-626-652-11	(AEP, Italian)...PC BOARD, FUSE	
10	*3-350-131-41	(AEP, Italian)...PANEL, BACK		CN515	*1-565-562-11	CONNECTOR (BASE POST) 3P (AU BUS)	
	3-350-131-51	(UK)...PANEL, BACK		CN901	▲1-526-751-00	(UK)...OUTLET, AC	
11	3-332-819-01	HOLDER CONNECTOR			▲1-526-794-11	(AEP, Italian)...OUTLET, AC	
12	*3-350-123-01	PLATE (MDB), SHIELD		F501	▲1-532-259-00	FUSE, TIME-LAG (1.6A)	
13	*3-337-402-01	BAND, BINDING		F502	▲1-532-259-00	FUSE, TIME-LAG (1.6A)	
14	X-4917-254-1	FOOT ASSY		F503	▲1-532-078-00	(AEP, Italian)...FUSE, TIME-LAG (1A)	
15	7-682-547-09	SCREW +BVTT 3X6 (S)		T901	▲1-449-460-11	TRANSFORMER, POWER	
16	7-682-547-04	SCREW +BVTT 3X6 (S)					

5-2. FRONT PANEL SECTION

- D : CONTROL SW (A) board
- E : CONTROL SW (B) board
- F : FL board
- G : REC VOL board



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
51	3-343-686-31	LID, CASSETTE (DECK B)		64	X-3332-464-1	GEAR (DAMPER) ASSY	
52	3-343-686-21	LID, CASSETTE (DECK A)		65	X-3343-632-1	BUTTON (C) ASSY	
53	3-343-633-01	KNOB (φ21) (REC LEVEL R)		66	4-922-518-11	KNOB (AUTO CD SYNCHRO; MODE)	
54	3-343-634-01	KNOB (φ23) (REC LEVEL L)		67	4-924-444-11	KNOB (DIRECTION MODE/DOLBY NR)	
55	X-3343-636-1	PANEL ASSY, FRONT		68	*X-3343-626-1	BRACKET (LB) ASSY	
56	3-343-688-01	SPRING (LOADING RIGHT)		69	*X-3343-627-1	BRACKET (RB) ASSY	
57	X-3343-628-1	HOLDER ASSY, CASSETTE		70	*3-350-117-01	REINFORCEMENT (FP)	
58	3-343-687-01	SPRING (LOADING LEFT)		72	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
59	*3-340-123-01	RETAINER, CASSETTE		73	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
60	*X-3343-624-1	BRACKET (LA) ASSY		74	7-685-533-11	SCREW +BTP 2.6X6 TYPE2 N-S	
61	7-624-105-04	STOP RING 2.3, TYPE -E		75	7-624-190-31	STOP RING 4, TYPE-CS	
62	3-343-689-01	SPRING, TENSION		76	4-928-401-11	FELT	
63	*X-3343-625-1	BRACKET (RA) ASSY		77	3-350-116-02	HOLDER (FL)	
				FL501	1-519-493-11	INDICATOR TUBE, FLUORESCENT	
				RV501	1-238-300-11	RES, VAR, CARBON 10K/10K (REC LEVEL)	

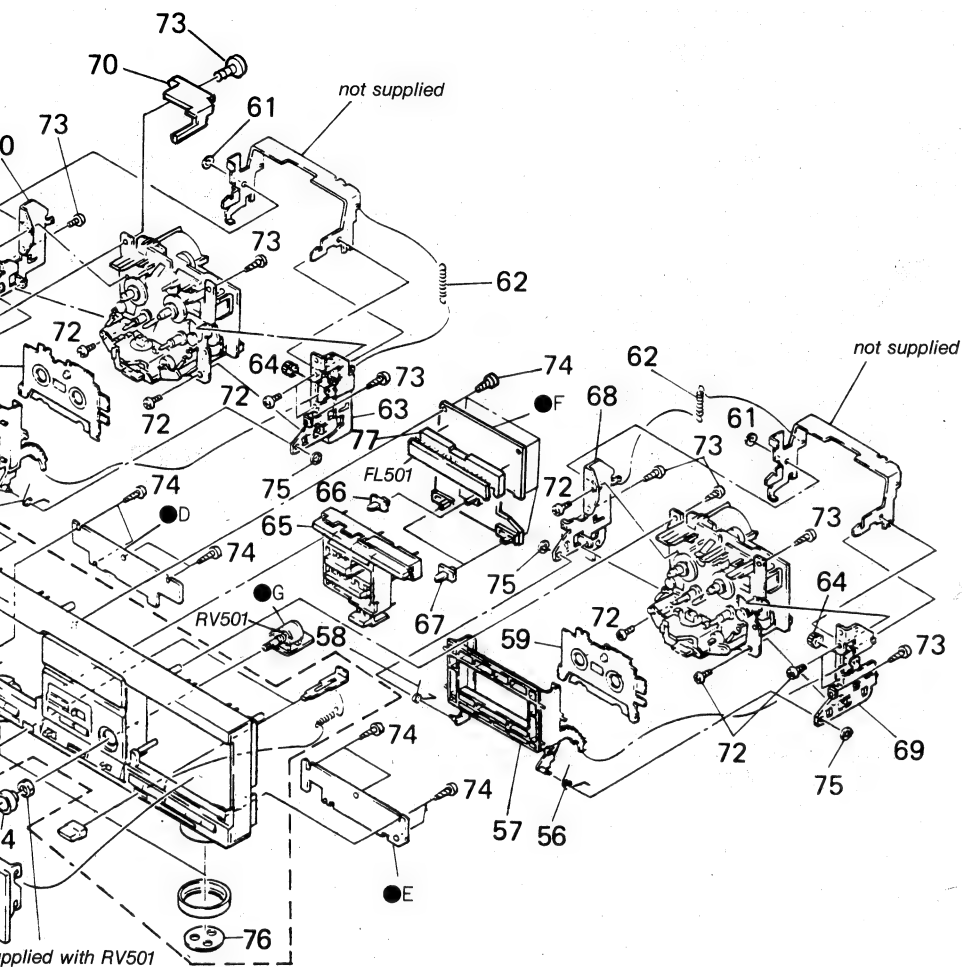
5-3. MECH

TCM-17

TCM-17

ION

ard  
ard

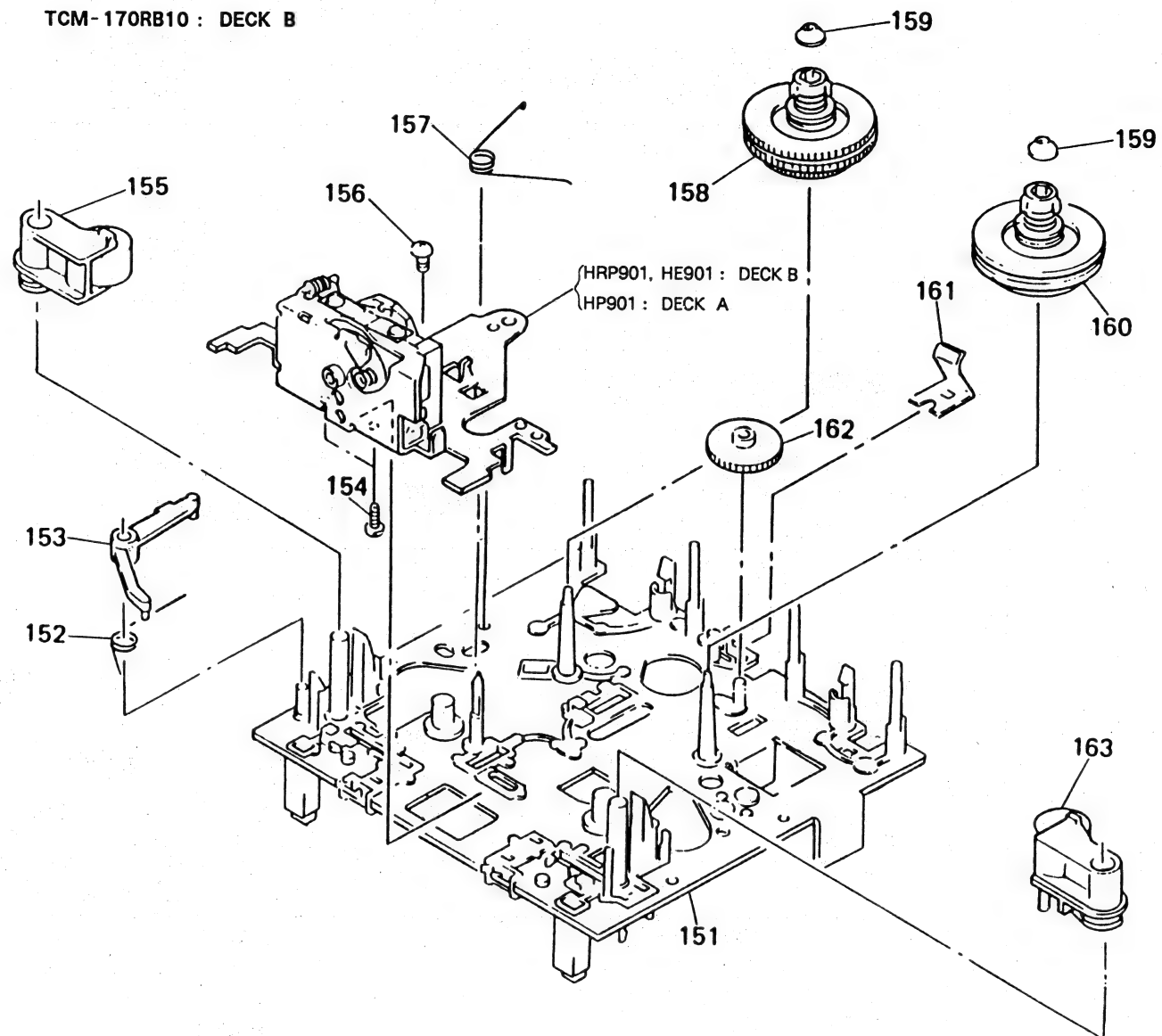


Remark	Ref.No	Part No.	Description	Remark
	64	X-3332-464-1	GEAR (DAMPER) ASSY	
	65	X-3343-632-1	BUTTON (C) ASSY	
	66	4-922-518-11	KNOB (AUTO CD SYNCHRO; MODE)	
	67	4-924-444-11	KNOB (DIRECTION MODE/DOLBY NR)	
	68	*X-3343-626-1	BRACKET (LB) ASSY	
	69	*X-3343-627-1	BRACKET (RB) ASSY	
	70	*3-350-117-01	REINFORCEMENT (FP)	
	72	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
	73	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
	74	7-685-533-11	SCREW +BTP 2.6X6 TYPE2 N-S	
	75	7-624-190-31	STOP RING 4, TYPE-CS	
	76	4-928-401-11	FELT	
	77	3-350-116-02	HOLDER (FL)	
	FL501	1-519-493-11	INDICATOR TUBE, FLUORESCENT	
	RV501	1-238-300-11	RES, VAR, CARBON 10K/10K (REC LEVEL)	

### 5-3. MECHANISM SECTION 1

TCM-170RA4 : DECK A

TCM-170RB10 : DECK B



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*X-3343-439-1	CHASSIS ASSY, MECHANICAL		161	3-343-420-01	SPRING, LEAF	
152	3-343-477-01	SPRING, TORSION (EJECT SAFTY)		162	3-343-411-01	GEAR (FF GEAR)	
153	*3-343-476-01	LEVER (EJECT SAFETY LEVER)		163	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
154	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2					
155	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY		HP901	A-2108-129-A	(DECK A)...CHASSIS ASSY, HEAD	
				HE901	A-2108-124-A	(DECK B)...CHASSIS ASSY, HEAD	
156	7-621-773-86	SCREW +BVTT 2.6X4 (S)					
157	3-343-401-01	SPRING, TORSION					
158	X-3343-415-1	TABEL (REV) ASSY, REEL					
159	3-343-439-01	CAP (REEL TABLE)					
160	X-3343-401-1	TABEL ASSY, REEL					





## SECTION 6

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ MF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**In each case, U:  $\mu$ , for example:UA....:  $\mu$ A...., UPA....:  $\mu$ PA....,UPC....:  $\mu$ PC, UPD....:  $\mu$ PD....

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description					Ref.No	Part No.	Description				
901	*A-2006-125-A	MOUNTED PCB, AUDIO					C101	1-124-925-11	ELECT	2.2MF	20%	50V	
902	*1-630-423-11	PC BOARD, HX PRO					C102	1-124-925-11	ELECT	2.2MF	20%	50V	
904	1-533-162-00	HOLDER, FUSE					C103	1-124-925-11	ELECT	2.2MF	20%	50V	
905	1-555-750-00	(AEP, Italian)...CORD, POWER					C104	1-124-925-11	ELECT	2.2MF	20%	50V	
	1-556-562-00	(UK)...CORD, POWER					C105	1-124-927-11	ELECT	4.7MF	20%	50V	
906	*1-626-652-11	(AEP, Italian)...PC BOARD, FUSE					C106	1-124-927-11	ELECT	4.7MF	20%	50V	
921	*1-624-147-11	(DECK A)...PC BOARD, MD (A)					C107	1-136-156-00	FILM	0.018MF	5%	50V	
	*1-629-211-11	(DECK B)...PC BOARD, MD (B)					C108	1-124-927-11	ELECT	4.7MF	20%	50V	
922	*1-624-148-11	PC BOARD, LEAF SW					C109	1-130-479-00	MYLAR	0.0047MF	5%	50V	
923	*1-628-656-11	PC BOARD, REEL SENSOR					C110	1-136-173-00	FILM	0.47MF	5%	50V	
<b>CAPACITOR</b>													
C21	1-124-902-00	ELECT	0.47MF	20%	50V		C111	1-136-167-00	FILM	0.15MF	5%	50V	
C41A	1-162-289-31	CERAMIC	390PF	10%	50V		C112	1-136-155-00	FILM	0.015MF	5%	50V	
C41B	1-130-469-00	MYLAR	680PF	5%	50V		C113	1-136-169-00	FILM	0.22MF	5%	50V	
C42A	1-136-157-00	FILM	0.022MF	5%	50V		C114	1-136-163-00	FILM	0.068MF	5%	50V	
C42B	1-136-157-00	FILM	0.022MF	5%	50V		C115	1-136-161-00	FILM	0.047MF	5%	50V	
C43A	1-124-282-00	ELECT	22MF	20%	25V		C116	1-130-481-00	MYLAR	0.0068MF	5%	50V	
C43B	1-124-282-00	ELECT	22MF	20%	25V		C117	1-136-153-00	FILM	0.01MF	5%	50V	
C44	1-162-285-31	CERAMIC	180PF	10%	50V		C118	1-124-927-11	ELECT	4.7MF	20%	50V	
C45	1-107-210-00	MICA	22PF	5%	500V		C119	1-124-767-00	ELECT	2.2MF	20%	50V	
C51	1-136-153-00	FILM	0.01MF	5%	50V		C121	1-124-927-11	ELECT	4.7MF	20%	50V	
C52	1-136-157-00	FILM	0.022MF	5%	50V		C122	1-124-927-11	ELECT	4.7MF	20%	50V	
C53	1-136-165-00	FILM	0.1MF	5%	50V		C123	1-124-477-11	ELECT	47MF	20%	16V	
C54	1-136-433-11	FILM	100PF	5%	630V		C124	1-136-159-00	FILM	0.033MF	5%	50V	
C55	1-136-433-11	FILM	100PF	5%	630V		C125	1-130-481-00	MYLAR	0.0068MF	5%	50V	
C56	1-130-468-00	MYLAR	560PF	5%	50V		C129	1-130-482-00	MYLAR	0.0082MF	5%	50V	
C61A	1-162-289-31	CERAMIC	390PF	10%	50V		C130	1-130-473-00	MYLAR	0.0015MF	5%	50V	
C61B	1-130-469-00	MYLAR	680PF	5%	50V		C133	1-130-472-00	MYLAR	0.0012MF	5%	50V	
C62A	1-136-157-00	FILM	0.022MF	5%	50V		C135	1-136-156-00	FILM	0.018MF	5%	50V	
C62B	1-136-157-00	FILM	0.022MF	5%	50V		C136	1-130-477-00	MYLAR	0.0033MF	5%	50V	
C63A	1-124-282-00	ELECT	22MF	20%	25V		C137	1-130-472-00	MYLAR	0.0012MF	5%	50V	
C63B	1-124-282-00	ELECT	22MF	20%	25V		C138	1-162-285-31	CERAMIC	180PF	10%	50V	
C64	1-162-285-31	CERAMIC	180PF	10%	50V		C201	1-124-925-11	ELECT	2.2MF	20%	50V	
C65	1-107-210-00	MICA	22PF	5%	500V		C202	1-124-925-11	ELECT	2.2MF	20%	50V	
C71	1-136-153-00	FILM	0.01MF	5%	50V		C203	1-124-925-11	ELECT	2.2MF	20%	50V	
C72	1-136-157-00	FILM	0.022MF	5%	50V		C204	1-124-925-11	ELECT	2.2MF	20%	50V	
C73	1-136-165-00	FILM	0.1MF	5%	50V		C205	1-124-927-11	ELECT	4.7MF	20%	50V	
C74	1-136-433-11	FILM	100PF	5%	630V		C206	1-124-927-11	ELECT	4.7MF	20%	50V	
C75	1-136-433-11	FILM	100PF	5%	630V		C207	1-136-156-00	FILM	0.018MF	5%	50V	
C76	1-130-468-00	MYLAR	560PF	5%	50V		C208	1-124-927-11	ELECT	4.7MF	20%	50V	
C81A	1-126-101-11	ELECT	100MF	20%	16V		C209	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C81B	1-124-443-00	ELECT	100MF	20%	10V		C210	1-136-173-00	FILM	0.47MF	5%	50V	
C82A	1-126-101-11	ELECT	100MF	20%	16V		C211	1-136-167-00	FILM	0.15MF	5%	50V	
C82B	1-124-443-00	ELECT	100MF	20%	10V		C212	1-136-155-00	FILM	0.015MF	5%	50V	
C84B	1-123-875-11	ELECT	10MF	20%	50V		C213	1-136-169-00	FILM	0.22MF	5%	50V	
C85B	1-130-856-00	FILM	0.0068MF	5%	100V		C214	1-136-163-00	FILM	0.068MF	5%	50V	
C86B	1-136-230-00	FILM	0.0022MF	5%	100V		C215	1-136-161-00	FILM	0.047MF	5%	50V	
C87B	1-136-230-00	FILM	0.0022MF	5%	100V		C216	1-130-481-00	MYLAR	0.0068MF	5%	50V	
C88B	1-136-558-11	FILM	0.0039MF	5%	630V		C217	1-136-153-00	FILM	0.01MF	5%	50V	
C90B	1-126-101-11	ELECT	100MF	20%	16V		C218	1-124-927-11	ELECT	4.7MF	20%	50V	
C91B	1-161-375-00	CERAMIC	0.0022MF	30%	16V		C219	1-124-767-00	ELECT	2.2MF	20%	50V	
C92	1-126-101-11	ELECT	100MF	20%	16V		C221	1-124-927-11	ELECT	4.7MF	20%	50V	
C93	1-124-446-11	ELECT	47MF	20%	10V		C222	1-124-927-11	ELECT	4.7MF	20%	50V	
C94	1-107-046-00	MICA	4.7PF	0.5PF	500V		C223	1-124-477-11	ELECT	47MF	20%	16V	
							C224	1-136-159-00	FILM	0.033MF	5%	50V	
							C225	1-130-481-00	MYLAR	0.0068MF	5%	50V	

Ref.No	Part No.	Description			
C229	1-130-482-00	MYLAR	0.0082MF	5%	50V
C230	1-130-473-00	MYLAR	0.0015MF	5%	50V
C233	1-130-472-00	MYLAR	0.0012MF	5%	50V
C235	1-136-156-00	FILM	0.018MF	5%	50V
C236	1-130-477-00	MYLAR	0.0033MF	5%	50V
C237	1-130-472-00	MYLAR	0.0012MF	5%	50V
C238	1-162-285-31	CERAMIC	180PF	10%	50V
C501	1-124-477-11	ELECT	47MF	20%	16V
C502	1-124-477-11	ELECT	47MF	20%	16V
C503	1-124-477-11	ELECT	47MF	20%	16V
C504	1-124-477-11	ELECT	47MF	20%	16V
C505	1-124-477-11	ELECT	47MF	20%	16V
C506	1-124-477-11	ELECT	47MF	20%	16V
C507	1-124-477-11	ELECT	47MF	20%	16V
C508	1-124-477-11	ELECT	47MF	20%	16V
C509	1-124-477-11	ELECT	47MF	20%	16V
C510	1-124-477-11	ELECT	47MF	20%	16V
C511	1-124-925-11	ELECT	2.2MF	20%	50V
C512	1-136-157-00	FILM	0.022MF	5%	50V
C513	1-124-925-11	ELECT	2.2MF	20%	50V
C514	1-124-925-11	ELECT	2.2MF	20%	50V
C515	1-124-499-11	ELECT	1MF	20%	50V
C516	1-124-360-00	ELECT	1000MF	20%	16V
C517	1-124-360-00	ELECT	1000MF	20%	16V
C518	1-124-360-00	ELECT	1000MF	20%	16V
C519	1-124-477-11	ELECT	47MF	20%	16V
C520	1-124-556-11	ELECT	2200MF	20%	16V
C521	1-124-887-00	ELECT	3300MF	20%	16V
C522	1-124-911-11	ELECT	220MF	20%	50V
C523	1-123-875-11	ELECT	10MF	20%	50V
C524	1-124-927-11	ELECT	4.7MF	20%	50V
C525	1-123-875-11	ELECT	10MF	20%	50V
C526	1-124-925-11	ELECT	2.2MF	20%	50V
C527	1-124-472-11	ELECT	470MF	20%	6.3V
C528	1-124-927-11	ELECT	4.7MF	20%	50V
C529	1-161-494-00	CERAMIC	0.022MF		25V
C530	1-161-494-00	CERAMIC	0.022MF		25V
C531	1-161-494-00	CERAMIC	0.022MF		25V
C532	1-161-494-00	CERAMIC	0.022MF		25V
C533	1-161-494-00	CERAMIC	0.022MF		25V
C534	1-124-499-11	ELECT	1MF	20%	50V
C801	1-126-176-11	ELECT	220MF	20%	10V
C802	1-124-925-11	ELECT	2.2MF	20%	50V
C803	1-124-927-11	ELECT	4.7MF	20%	50V
C805	1-124-477-11	ELECT	47MF	20%	16V
C812	1-126-176-11	ELECT	220MF	20%	10V
CN501	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CN502	*1-564-341-11	PIN, CONNECTOR 7P			
CN503	*1-506-503-11	PIN, CONNECTOR 9P			
CN504	*1-564-338-00	PIN, CONNECTOR 4P			
CN505	*1-564-342-61	PIN, CONNECTOR 8P			
CN506	*1-564-341-71	PIN, CONNECTOR 7P			
CN507	*1-564-342-11	PIN, CONNECTOR 8P			
CN512	*1-564-338-00	PIN, CONNECTOR 4P			
CN515	*1-565-562-11	CONNECTOR (BASE POST) 3P (AU BUS)			
CN516	*1-564-496-11	PIN, CONNECTOR 3P			
CN901	△1-526-751-00	(UK)....OUTLET, AC			
	△1-526-794-11	(AEP)....OUTLET, AC			
CNP11A	*1-564-501-11	PIN, CONNECTOR 8P			
CNP11B	*1-506-615-11	PIN, CONNECTOR 9P			
CNP12A	*1-564-338-00	PIN, CONNECTOR 4P			
CNP12B	*1-564-341-11	PIN, CONNECTOR 7P			
CNP13A	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP13B	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			

Ref.No	Part No.	Description
CNP14B	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNP16A	*1-564-337-00	PIN, CONNECTOR 3P
CNP16B	*1-564-337-00	PIN, CONNECTOR 3P
CNP18A	*1-564-496-11	PIN, CONNECTOR 3P
CNP18B	*1-564-496-11	PIN, CONNECTOR 3P
CNP21B	*1-565-344-11	PIN, CONNECTOR (PC BOARD) 8P
CNP22	*1-565-347-11	SOCKET, CONNECTOR (PC BOARD) 8P
CNP81A	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNP81B	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CNP82A	*1-564-339-00	PIN, CONNECTOR 5P
CNP82B	*1-564-339-61	PIN, CONNECTOR 5P
CNP83	*1-564-338-00	PIN, CONNECTOR 4P
CP501	1-233-167-11	COMPOSITION CIRCUIT BLOCK
CP502	1-233-166-11	COMPOSITION CIRCUIT BLOCK
D11A	8-719-107-94	DIODE 1SS132
D11B	8-719-107-94	DIODE 1SS132
D81B	8-719-107-94	DIODE 1SS132
D101	8-719-912-20	DIODE 1SS120
D201	8-719-912-20	DIODE 1SS120
D503	8-719-200-77	DIODE 10E2N
D504	8-719-200-77	DIODE 10E2N
D505	8-719-200-77	DIODE 10E2N
D506	8-719-200-77	DIODE 10E2N
D507	8-719-912-20	DIODE 1SS120
D508	8-719-933-33	DIODE HZS6A1L
D509	8-719-933-33	DIODE HZS6A1L
D510	8-719-912-20	DIODE 1SS120
D511	8-719-200-77	DIODE 10E2N
D512	8-719-200-77	DIODE 10E2N
D513	8-719-200-77	DIODE 10E2N
D514	8-719-912-20	DIODE 1SS120
D515	8-719-912-20	DIODE 1SS120
D516	8-719-912-20	DIODE 1SS120
D517	8-719-912-20	DIODE 1SS120
D519	8-719-933-33	DIODE HZS6A1L
D520	8-719-912-20	DIODE 1SS120
D521	8-719-912-20	DIODE 1SS120
D522	8-719-912-20	DIODE 1SS120
D523	8-719-000-51	DIODE UZL-6L2
D524	8-719-912-20	DIODE 1SS120
D525	8-719-200-77	DIODE 10E2N
D801	8-719-300-71	DIODE SEL2210R
D802	8-719-304-85	DIODE SEL2410G-D
D803	8-719-300-71	DIODE SEL2210R
D804	8-719-300-71	DIODE SEL2210R
D805	8-719-300-71	DIODE SEL2210R
D806	8-719-311-61	DIODE SEL2810D-D
D807	8-719-312-29	DIODE SEL4826D-C
D808	8-719-311-70	DIODE SEL4825D-C
D809	8-719-311-70	DIODE SEL4825D-C
D810	8-719-304-96	DIODE SEL4425G-C
D811	8-719-311-70	DIODE SEL4825D-C
D812	8-719-311-70	DIODE SEL4825D-C
D813	8-719-304-96	DIODE SEL4425G-C
D814	8-719-312-29	DIODE SEL4826D-C
D815	8-719-312-30	DIODE SEL4226R-C
D816	8-719-912-20	DIODE 1SS120
D817	8-719-912-20	DIODE 1SS120
D818	8-719-200-77	DIODE 10E2N
D819	8-719-200-77	DIODE 10E2N
D820	8-719-200-77	DIODE 10E2N
D822	8-719-912-20	DIODE 1SS120
D823	8-719-912-20	DIODE 1SS120
D824	8-719-912-20	DIODE 1SS120

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description
D825	8-719-912-20	DIODE 1SS120
D826	8-719-912-20	DIODE 1SS120
D827	8-719-912-20	DIODE 1SS120
D828	8-719-912-20	DIODE 1SS120
F301	△ 1-532-675-00	LINK, IC
F501	△ 1-532-259-00	FUSE, TIME-LAG (1.6A)
F502	△ 1-532-259-00	FUSE, TIME-LAG (1.6A)
F503	△ 1-532-078-00	(AEP, Italian)... FUSE, TIME-LAG (1A)
FL501	1-519-493-11	INDICATOR TUBE, FLUORESCENT
HE901	A-2108-124-A	(DECK B)...CHASSIS ASSY, HEAD
HP901	A-2108-129-A	(DECK A)...CHASSIS ASSY, HEAD
HRP901	A-2108-124-A	(DECK B)...CHASSIS ASSY, HEAD
IC21	8-759-133-90	IC UPC339C
IC81A	8-759-111-44	IC UPC4570C-1
IC81B	8-759-111-44	IC UPC4570C-1
IC91	8-759-106-56	IC UPC1297CA
IC501	8-759-601-02	IC M5218P
IC502	8-759-601-02	IC M5218P
IC503	8-759-601-43	IC M4066BP
IC504	8-759-601-02	IC M5218P
IC505	8-759-601-41	IC M4053BP
IC506	8-752-018-70	IC CX20187
IC507	8-759-601-02	IC M5218P
IC509	8-759-601-23	IC M4023BP
IC510	8-759-945-58	IC RC4558P
IC511	8-759-601-02	IC M5218P
IC801	8-759-979-32	IC MB88517B-659N
IC802	8-759-601-38	IC M4050BP
IC803	8-759-633-22	IC M50964-210SP
J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)
L41	1-410-780-11	INDUCTOR 27MMH
L61	1-410-780-11	INDUCTOR 27MMH
L101	1-410-775-21	INDUCTOR 10MMH
L102	1-410-775-21	INDUCTOR 10MMH
L201	1-410-775-21	INDUCTOR 10MMH
L202	1-410-775-21	INDUCTOR 10MMH
LPF101	1-236-147-11	FILTER, LOW PASS
LPF201	1-236-147-11	FILTER, LOW PASS
M901-A	X-3343-408-1	(DECK A)...MOTOR ASSY
M901-B	X-3343-408-1	(DECK B)...MOTOR ASSY
PM901-A	1-454-456-11	(DECK A)...SOLENOID, PLUNGER
PM901-B	1-454-456-11	(DECK B)...SOLENOID, PLUNGER
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12A	8-719-939-23	GP2S09-C
Q12B	8-719-939-23	GP2S09-C
Q14A	8-719-939-23	GP2S09-C
Q14B	8-719-939-23	GP2S09-C
Q21	8-729-806-20	TRANSISTOR 2SA1345
Q81B	8-729-116-57	TRANSISTOR 2SB1013
Q82B	8-729-194-57	TRANSISTOR 2SC945P
Q83B	8-729-194-57	TRANSISTOR 2SC945P
Q101	8-729-806-28	TRANSISTOR 2SC3402
Q102	8-729-806-28	TRANSISTOR 2SC3402
Q103	8-729-806-28	TRANSISTOR 2SC3402
Q104	8-729-806-28	TRANSISTOR 2SC3402
Q105	8-729-806-28	TRANSISTOR 2SC3402
Q108	8-729-900-74	TRANSISTOR DTC143TS
Q109	8-729-806-28	TRANSISTOR 2SC3402

Ref.No	Part No.	Description
Q110	8-729-900-74	TRANSISTOR DTC143TS
Q111	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q112	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q113	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q114	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q115	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q117	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q118	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q119	8-729-806-28	TRANSISTOR 2SC3402
Q201	8-729-806-28	TRANSISTOR 2SC3402
Q202	8-729-806-28	TRANSISTOR 2SC3402
Q203	8-729-806-28	TRANSISTOR 2SC3402
Q204	8-729-806-28	TRANSISTOR 2SC3402
Q205	8-729-806-28	TRANSISTOR 2SC3402
Q208	8-729-900-74	TRANSISTOR DTC143TS
Q209	8-729-806-28	TRANSISTOR 2SC3402
Q210	8-729-900-74	TRANSISTOR DTC143TS
Q211	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q213	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q214	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q215	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q217	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q218	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q219	8-729-806-28	TRANSISTOR 2SC3402
Q501	8-729-806-10	TRANSISTOR 2SA1348
Q502	8-729-806-10	TRANSISTOR 2SA1348
Q503	8-729-806-10	TRANSISTOR 2SA1348
Q504	8-729-806-10	TRANSISTOR 2SA1348
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q506	8-729-900-74	TRANSISTOR DTC143TS
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q508	8-729-920-91	TRANSISTOR 2SB1187-F
Q509	8-729-920-91	TRANSISTOR 2SB1187-F
Q510	8-729-808-76	TRANSISTOR 2SD1761-E
Q511	8-729-802-22	TRANSISTOR 2SB1014
Q512	8-729-802-22	TRANSISTOR 2SB1014
Q513	8-729-806-20	TRANSISTOR 2SA1345
Q514	8-729-806-20	TRANSISTOR 2SA1345
Q515	8-729-806-10	TRANSISTOR 2SA1348
Q516	8-729-806-28	TRANSISTOR 2SC3402
Q517	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q518	8-729-806-28	TRANSISTOR 2SC3402
Q801	8-729-806-10	TRANSISTOR 2SA1348
Q802	8-729-806-10	TRANSISTOR 2SA1348
Q803	8-729-806-10	TRANSISTOR 2SA1348
Q804	8-729-806-10	TRANSISTOR 2SA1348
Q805	8-729-806-10	TRANSISTOR 2SA1348
Q806	8-729-806-10	TRANSISTOR 2SA1348
Q807	8-729-806-10	TRANSISTOR 2SA1348
Q808	8-729-806-10	TRANSISTOR 2SA1348
Q809	8-729-806-10	TRANSISTOR 2SA1348
Q810	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q811	8-729-806-10	TRANSISTOR 2SA1348
Q812	8-729-806-28	TRANSISTOR 2SC3402
Q813	8-729-806-10	TRANSISTOR 2SA1348
Q814	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q815	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q816	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q817	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q818	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q819	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q820	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q822	8-729-806-10	TRANSISTOR 2SA1348
Q823	8-729-806-10	TRANSISTOR 2SA1348

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description			
Q824	8-729-806-10	TRANSISTOR 2SA1348			
Q825	8-729-802-22	TRANSISTOR 2SB1014			
Q826	8-729-806-10	TRANSISTOR 2SA1348			
Q827	8-729-901-93	TRANSISTOR 2SD1387			
Q828	8-729-806-10	TRANSISTOR 2SA1348			
Q829	8-729-901-93	TRANSISTOR 2SD1387			
Q830	8-729-802-22	TRANSISTOR 2SB1014			
Q831	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q832	8-729-802-22	TRANSISTOR 2SB1014			
Q833	8-729-806-10	TRANSISTOR 2SA1348			
<b>RESISTOR</b>					
R11B	1-247-834-11	CARBON	1.3K	5%	1/4W
R12B	1-249-414-11	CARBON	560	5%	1/4W
R13B	1-247-818-11	CARBON	300	5%	1/4W
R14A	1-249-408-11	CARBON	180	5%	1/4W
R14B	1-249-408-11	CARBON	180	5%	1/4W
R16A	1-249-410-11	CARBON	270	5%	1/4W
R16B	1-249-410-11	CARBON	270	5%	1/4W
R17A	1-249-437-11	CARBON	47K	5%	1/4W
R17B	1-249-437-11	CARBON	47K	5%	1/4W
R18A	1-249-437-11	CARBON	47K	5%	1/4W
R18B	1-249-437-11	CARBON	47K	5%	1/4W
R21	1-249-425-11	CARBON	4.7K	5%	1/4W
R22	1-249-421-11	CARBON	2.2K	5%	1/4W
R23	1-249-421-11	CARBON	2.2K	5%	1/4W
R24	1-249-423-11	CARBON	3.3K	5%	1/4W
R25	1-249-429-11	CARBON	10K	5%	1/4W
R26	1-249-432-11	CARBON	18K	5%	1/4W
R27	1-249-426-11	CARBON	5.6K	5%	1/4W
R28	1-249-426-11	CARBON	5.6K	5%	1/4W
R29	1-249-425-11	CARBON	4.7K	5%	1/4W
R41A	1-247-881-00	CARBON	120K	5%	1/4W
R41B	1-249-435-11	CARBON	33K	5%	1/4W
R42A	1-249-405-11	CARBON	100	5%	1/4W
R42B	1-249-404-00	CARBON	82	5%	1/4W
R43A	1-247-882-11	CARBON	130K	5%	1/4W
R43B	1-247-882-11	CARBON	130K	5%	1/4W
R44A	1-249-426-11	CARBON	5.6K	5%	1/4W
R44B	1-249-426-11	CARBON	5.6K	5%	1/4W
R45	1-249-428-11	CARBON	8.2K	5%	1/4W
R51	1-249-435-11	CARBON	33K	5%	1/4W
R52	1-249-393-11	CARBON	10	5%	1/4W
R53	1-247-883-00	CARBON	150K	5%	1/4W
R54	1-249-430-11	CARBON	12K	5%	1/4W
R61A	1-247-881-00	CARBON	120K	5%	1/4W
R61B	1-249-435-11	CARBON	33K	5%	1/4W
R62A	1-249-405-11	CARBON	100	5%	1/4W
R62B	1-249-404-00	CARBON	82	5%	1/4W
R63A	1-247-882-11	CARBON	130K	5%	1/4W
R63B	1-247-882-11	CARBON	130K	5%	1/4W
R64A	1-249-426-11	CARBON	5.6K	5%	1/4W
R64B	1-249-426-11	CARBON	5.6K	5%	1/4W
R65	1-249-428-11	CARBON	8.2K	5%	1/4W
R71	1-249-435-11	CARBON	33K	5%	1/4W
R72	1-249-393-11	CARBON	10	5%	1/4W
R73	1-247-883-00	CARBON	150K	5%	1/4W
R74	1-249-430-11	CARBON	12K	5%	1/4W
R81A	1-249-409-11	CARBON	220	5%	1/4W
R81B	1-249-409-11	CARBON	220	5%	1/4W
R82A	1-249-409-11	CARBON	220	5%	1/4W
R82B	1-249-409-11	CARBON	220	5%	1/4W
R84B	1-212-849-00	FUSIBLE	4.7	5%	1/4W
R85B	1-249-437-11	CARBON	47K	5%	1/4W
R86B	1-249-437-11	CARBON	47K	5%	1/4W
R87B	1-249-429-11	CARBON	10K	5%	1/4W

Ref.No	Part No.	Description			
R88B	1-249-429-11	CARBON	10K	5%	1/4W
R101	1-249-417-11	CARBON	1K	5%	1/4W
R102	1-249-436-11	CARBON	39K	5%	1/4W
R103	1-249-441-11	CARBON	100K	5%	1/4W
R104	1-249-433-11	CARBON	22K	5%	1/4W
R105	1-247-903-00	CARBON	1M	5%	1/4W
R106	1-249-433-11	CARBON	22K	5%	1/4W
R107	1-249-429-11	CARBON	10K	5%	1/4W
R108	1-249-433-11	CARBON	22K	5%	1/4W
R109	1-249-436-11	CARBON	39K	5%	1/4W
R110	1-249-440-11	CARBON	82K	5%	1/4W
R111	1-247-884-11	CARBON	160K	5%	1/4W
R112	1-249-423-11	CARBON	3.3K	5%	1/4W
R113	1-249-436-11	CARBON	39K	5%	1/4W
R114	1-249-417-11	CARBON	1K	5%	1/4W
R115	1-249-427-11	CARBON	6.8K	5%	1/4W
R116	1-247-887-00	CARBON	220K	5%	1/4W
R117	1-249-441-11	CARBON	100K	5%	1/4W
R119	1-249-433-11	CARBON	22K	5%	1/4W
R120	1-249-421-11	CARBON	2.2K	5%	1/4W
R122	1-249-440-11	CARBON	82K	5%	1/4W
R123	1-249-429-11	CARBON	10K	5%	1/4W
R124	1-249-437-11	CARBON	47K	5%	1/4W
R125	1-249-429-11	CARBON	10K	5%	1/4W
R126	1-249-397-11	CARBON	22	5%	1/4W
R128	1-247-887-00	CARBON	220K	5%	1/4W
R129	1-249-424-11	CARBON	3.9K	5%	1/4W
R130	1-249-424-11	CARBON	3.9K	5%	1/4W
R131	1-249-427-11	CARBON	6.8K	5%	1/4W
R132	1-249-423-11	CARBON	3.3K	5%	1/4W
R133	1-247-822-11	CARBON	430	5%	1/4W
R134	1-247-846-11	CARBON	4.3K	5%	1/4W
R135	1-247-840-00	CARBON	2.4K	5%	1/4W
R136	1-249-427-11	CARBON	6.8K	5%	1/4W
R137	1-249-415-11	CARBON	680	5%	1/4W
R138	1-249-429-11	CARBON	10K	5%	1/4W
R139	1-249-429-11	CARBON	10K	5%	1/4W
R140	1-249-421-11	CARBON	2.2K	5%	1/4W
R141	1-249-441-11	CARBON	100K	5%	1/4W
R142	1-247-887-00	CARBON	220K	5%	1/4W
R143	1-249-421-11	CARBON	2.2K	5%	1/4W
R144	1-249-437-11	CARBON	47K	5%	1/4W
R145	1-249-437-11	CARBON	47K	5%	1/4W
R146	1-249-409-11	CARBON	220	5%	1/4W
R148	1-247-848-11	CARBON	5.1K	5%	1/4W
R149	1-249-426-11	CARBON	5.6K	5%	1/4W
R150	1-249-424-11	CARBON	3.9K	5%	1/4W
R151	1-249-441-11	CARBON	100K	5%	1/4W
R152	1-249-407-11	CARBON	150	5%	1/4W
R154	1-249-426-11	CARBON	5.6K	5%	1/4W
R156	1-249-423-11	CARBON	3.3K	5%	1/4W
R157	1-249-441-11	CARBON	100K	5%	1/4W
R158	1-249-421-11	CARBON	2.2K	5%	1/4W
R159	1-249-437-11	CARBON	47K	5%	1/4W
R160	1-249-437-11	CARBON	47K	5%	1/4W
R161	1-249-437-11	CARBON	47K	5%	1/4W
R162	1-249-425-11	CARBON	4.7K	5%	1/4W
R164	1-249-437-11	CARBON	47K	5%	1/4W
R165	1-249-437-11	CARBON	47K	5%	1/4W
R167	1-247-840-00	CARBON	2.4K	5%	1/4W
R168	1-247-887-00	CARBON	220K	5%	1/4W
R169	1-249-431-11	CARBON	15K	5%	1/4W
R170	1-249-433-11	CARBON	22K	5%	1/4W
R171	1-249-437-11	CARBON	47K	5%	1/4W
R201	1-249-417-11	CARBON	1K	5%	1/4W

F

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.



Ref.No Part No. Description



R202	1-249-436-11	CARBON	39K	5%	1/4W
R203	1-249-441-11	CARBON	100K	5%	1/4W
R204	1-249-433-11	CARBON	22K	5%	1/4W
R205	1-247-903-00	CARBON	1M	5%	1/4W
R206	1-249-433-11	CARBON	22K	5%	1/4W
R207	1-249-429-11	CARBON	10K	5%	1/4W
R208	1-249-433-11	CARBON	22K	5%	1/4W
R209	1-249-436-11	CARBON	39K	5%	1/4W
R210	1-249-440-11	CARBON	82K	5%	1/4W
R211	1-247-884-11	CARBON	160K	5%	1/4W
R212	1-249-423-11	CARBON	3.3K	5%	1/4W
R213	1-249-436-11	CARBON	39K	5%	1/4W
R214	1-249-417-11	CARBON	1K	5%	1/4W
R215	1-249-427-11	CARBON	6.8K	5%	1/4W
R216	1-247-887-00	CARBON	220K	5%	1/4W
R217	1-249-441-11	CARBON	100K	5%	1/4W
R219	1-249-433-11	CARBON	22K	5%	1/4W
R220	1-249-421-11	CARBON	2.2K	5%	1/4W
R222	1-249-440-11	CARBON	82K	5%	1/4W
R223	1-249-429-11	CARBON	10K	5%	1/4W
R224	1-249-437-11	CARBON	47K	5%	1/4W
R225	1-249-429-11	CARBON	10K	5%	1/4W
R226	1-249-397-11	CARBON	22	5%	1/4W
R228	1-247-887-00	CARBON	220K	5%	1/4W
R229	1-249-424-11	CARBON	3.9K	5%	1/4W
R230	1-249-424-11	CARBON	3.9K	5%	1/4W
R231	1-249-427-11	CARBON	6.8K	5%	1/4W
R232	1-249-423-11	CARBON	3.3K	5%	1/4W
R233	1-247-822-11	CARBON	430	5%	1/4W
R234	1-247-846-11	CARBON	4.3K	5%	1/4W
R235	1-247-840-00	CARBON	2.4K	5%	1/4W
R236	1-249-427-11	CARBON	6.8K	5%	1/4W
R237	1-249-415-11	CARBON	680	5%	1/4W
R238	1-249-429-11	CARBON	10K	5%	1/4W
R239	1-249-429-11	CARBON	10K	5%	1/4W
R240	1-249-421-11	CARBON	2.2K	5%	1/4W
R241	1-249-441-11	CARBON	100K	5%	1/4W
R242	1-247-887-00	CARBON	220K	5%	1/4W
R243	1-249-421-11	CARBON	2.2K	5%	1/4W
R244	1-249-437-11	CARBON	47K	5%	1/4W
R245	1-249-437-11	CARBON	47K	5%	1/4W
R246	1-249-409-11	CARBON	220	5%	1/4W
R248	1-247-848-11	CARBON	5.1K	5%	1/4W
R249	1-249-426-11	CARBON	5.6K	5%	1/4W
R250	1-249-424-11	CARBON	3.9K	5%	1/4W
R251	1-249-441-11	CARBON	100K	5%	1/4W
R252	1-249-407-11	CARBON	150	5%	1/4W
R254	1-249-426-11	CARBON	5.6K	5%	1/4W
R256	1-249-423-11	CARBON	3.3K	5%	1/4W
R257	1-249-441-11	CARBON	100K	5%	1/4W
R258	1-249-421-11	CARBON	2.2K	5%	1/4W
R259	1-249-437-11	CARBON	47K	5%	1/4W
R260	1-249-437-11	CARBON	47K	5%	1/4W
R261	1-249-437-11	CARBON	47K	5%	1/4W
R262	1-249-425-11	CARBON	4.7K	5%	1/4W
R264	1-249-437-11	CARBON	47K	5%	1/4W
R265	1-249-437-11	CARBON	47K	5%	1/4W
R267	1-247-840-00	CARBON	2.4K	5%	1/4W
R268	1-247-887-00	CARBON	220K	5%	1/4W
R269	1-249-431-11	CARBON	15K	5%	1/4W
R270	1-249-433-11	CARBON	22K	5%	1/4W
R271	1-249-437-11	CARBON	47K	5%	1/4W
R501	1-249-429-11	CARBON	10K	5%	1/4W
R502	1-249-429-11	CARBON	10K	5%	1/4W
R504	1-215-469-00	METAL	100K	1%	1/6W

Ref.No Part No. Description

R507	1-249-429-11	CARBON	10K	5%	1/4W
R509	1-249-425-11	CARBON	4.7K	5%	1/4W
R510	1-249-441-11	CARBON	100K	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-249-411-11	CARBON	330	5%	1/4W
R513	1-247-844-11	CARBON	3.6K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W
R515	1-249-421-11	CARBON	2.2K	5%	1/4W
R552	1-249-425-11	CARBON	4.7K	5%	1/4W
R554	1-247-887-00	CARBON	220K	5%	1/4W
R555	1-249-429-11	CARBON	10K	5%	1/4W
R556	1-249-441-11	CARBON	100K	5%	1/4W
R557	1-249-428-11	CARBON	8.2K	5%	1/4W
R558	1-249-423-11	CARBON	3.3K	5%	1/4W
R559	1-249-441-11	CARBON	100K	5%	1/4W
R560	1-249-417-11	CARBON	1K	5%	1/4W
R561	1-249-441-11	CARBON	100K	5%	1/4W
R562	1-249-429-11	CARBON	10K	5%	1/4W
R563	1-249-441-11	CARBON	100K	5%	1/4W
R564	1-249-417-11	CARBON	1K	5%	1/4W
R565	1-249-437-11	CARBON	47K	5%	1/4W
R567	1-249-420-11	CARBON	1.8K	5%	1/4W
R568	1-249-427-11	CARBON	6.8K	5%	1/4W
R569	1-249-427-11	CARBON	6.8K	5%	1/4W
R570	1-247-854-11	CARBON	9.1K	5%	1/4W
R571	1-249-419-11	CARBON	1.5K	5%	1/4W
R572	1-249-417-11	CARBON	1K	5%	1/4W
R573	1-249-419-11	CARBON	1.5K	5%	1/4W
R574	1-249-427-11	CARBON	6.8K	5%	1/4W
R575	1-249-420-11	CARBON	1.8K	5%	1/4W
R576	1-249-429-11	CARBON	10K	5%	1/4W
R577	1-247-850-11	CARBON	6.2K	5%	1/4W
R578	1-249-417-11	CARBON	1K	5%	1/4W
R579	1-249-433-11	CARBON	22K	5%	1/4W
R581	1-249-417-11	CARBON	1K	5%	1/4W
R582	1-249-425-11	CARBON	4.7K	5%	1/4W
R583	1-249-425-11	CARBON	4.7K	5%	1/4W
R584	1-249-425-11	CARBON	4.7K	5%	1/4W
R585	1-249-421-11	CARBON	2.2K	5%	1/4W
R586	1-249-425-11	CARBON	4.7K	5%	1/4W
R587	1-247-887-00	CARBON	220K	5%	1/4W
R588	1-249-439-11	CARBON	68K	5%	1/4W
R589	1-249-417-11	CARBON	1K	5%	1/4W
R591	1-249-409-11	CARBON	220	5%	1/4W
R801	1-249-429-11	CARBON	10K	5%	1/4W
R802	1-249-427-11	CARBON	6.8K	5%	1/4W
R803	1-249-422-11	CARBON	2.7K	5%	1/4W
R804	1-249-430-11	CARBON	12K	5%	1/4W
R805	1-249-437-11	CARBON	47K	5%	1/4W
R806	1-249-437-11	CARBON	47K	5%	1/4W
R807	1-249-425-11	CARBON	4.7K	5%	1/4W
R808	1-249-417-11	CARBON	1K	5%	1/4W
R809	1-249-416-11	CARBON	820	5%	1/4W
R810	1-249-419-11	CARBON	1.5K	5%	1/4W
R811	1-249-422-11	CARBON	2.7K	5%	1/4W
R812	1-249-427-11	CARBON	6.8K	5%	1/4W
R828	1-249-424-11	CARBON	3.9K	5%	1/4W
R829	1-249-430-11	CARBON	12K	5%	1/4W
R830	1-249-426-11	CARBON	5.6K	5%	1/4W
R831	1-249-430-11	CARBON	12K	5%	1/4W
R832	1-249-412-11	CARBON	390	5%	1/4W
R833	1-249-411-11	CARBON	330	5%	1/4W
R834	1-249-413-11	CARBON	470	5%	1/4W
R835	1-249-415-11	CARBON	680	5%	1/4W
R836	1-249-427-11	CARBON	6.8K	5%	1/4W

Ref.No	Part No.	Description			
R837	1-249-430-11	CARBON	12K	5%	1/4W
R838	1-249-421-11	CARBON	2.2K	5%	1/4W
R839	1-249-421-11	CARBON	2.2K	5%	1/4W
R840	1-249-417-11	CARBON	1K	5%	1/4W
R841	1-249-415-11	CARBON	680	5%	1/4W
R842	1-249-407-11	CARBON	150	5%	1/4W
R843	1-249-409-11	CARBON	220	5%	1/4W
R844	1-249-411-11	CARBON	330	5%	1/4W
R845	1-249-421-11	CARBON	2.2K	5%	1/4W
R846	1-249-417-11	CARBON	1K	5%	1/4W
R847	1-249-420-11	CARBON	1.8K	5%	1/4W
R848	1-247-832-11	CARBON	1.1K	5%	1/4W
R849	1-249-407-11	CARBON	150	5%	1/4W
R850	1-249-409-11	CARBON	220	5%	1/4W
R851	1-249-411-11	CARBON	330	5%	1/4W
R852	1-249-413-11	CARBON	470	5%	1/4W
R853	1-249-429-11	CARBON	10K	5%	1/4W
R854	1-249-429-11	CARBON	10K	5%	1/4W
R855	1-249-429-11	CARBON	10K	5%	1/4W
R856	1-249-393-11	CARBON	10	5%	1/4W
R857	1-249-442-11	CARBON	510	5%	1/4W
R858	1-249-413-11	CARBON	470	5%	1/4W
R859	1-249-407-11	CARBON	150	5%	1/4W
R860	1-249-407-11	CARBON	150	5%	1/4W
R861	1-249-407-11	CARBON	150	5%	1/4W
R862	1-249-407-11	CARBON	150	5%	1/4W
R863	1-249-407-11	CARBON	150	5%	1/4W
R864	1-249-407-11	CARBON	150	5%	1/4W
R865	1-249-407-11	CARBON	150	5%	1/4W
R866	1-249-417-11	CARBON	1K	5%	1/4W
R867	1-249-413-11	CARBON	470	5%	1/4W
R868	1-249-425-11	CARBON	4.7K	5%	1/4W
R869	1-249-442-11	CARBON	510	5%	1/4W
R870	1-249-442-11	CARBON	510	5%	1/4W
R871	1-249-442-11	CARBON	510	5%	1/4W
R872	1-249-413-11	CARBON	470	5%	1/4W
R873	1-249-425-11	CARBON	4.7K	5%	1/4W
R874	1-249-425-11	CARBON	4.7K	5%	1/4W
R875	1-249-429-11	CARBON	10K	5%	1/4W
R876	1-249-425-11	CARBON	4.7K	5%	1/4W
R877	1-247-895-00	CARBON	470K	5%	1/4W
R878	1-249-436-11	CARBON	39K	5%	1/4W
R879	1-249-388-11	CARBON	3.9	5%	1/4W
R880	1-249-421-11	CARBON	2.2K	5%	1/4W
R881	1-249-433-11	CARBON	22K	5%	1/4W
R882	1-249-417-11	CARBON	1K	5%	1/4W
R883	1-249-417-11	CARBON	1K	5%	1/4W
R884	1-249-433-11	CARBON	22K	5%	1/4W
R885	1-249-421-11	CARBON	2.2K	5%	1/4W
R886	1-249-388-11	CARBON	3.9	5%	1/4W
R887	1-249-433-11	CARBON	22K	5%	1/4W
R888	1-249-417-11	CARBON	1K	5%	1/4W
R889	1-249-425-11	CARBON	4.7K	5%	1/4W
R890	1-247-895-00	CARBON	470K	5%	1/4W
R891	1-249-436-11	CARBON	39K	5%	1/4W
R896	1-249-436-11	CARBON	39K	5%	1/4W
R897	1-249-433-11	CARBON	22K	5%	1/4W
R898	1-247-895-00	CARBON	470K	5%	1/4W
R899	1-247-895-00	CARBON	470K	5%	1/4W
R900	1-249-436-11	CARBON	39K	5%	1/4W
R901	1-249-433-11	CARBON	22K	5%	1/4W
R902	1-247-903-00	CARBON	1M	5%	1/4W
R903	1-249-425-11	CARBON	4.7K	5%	1/4W
R904	1-247-903-00	CARBON	1M	5%	1/4W
R905	1-249-425-11	CARBON	4.7K	5%	1/4W

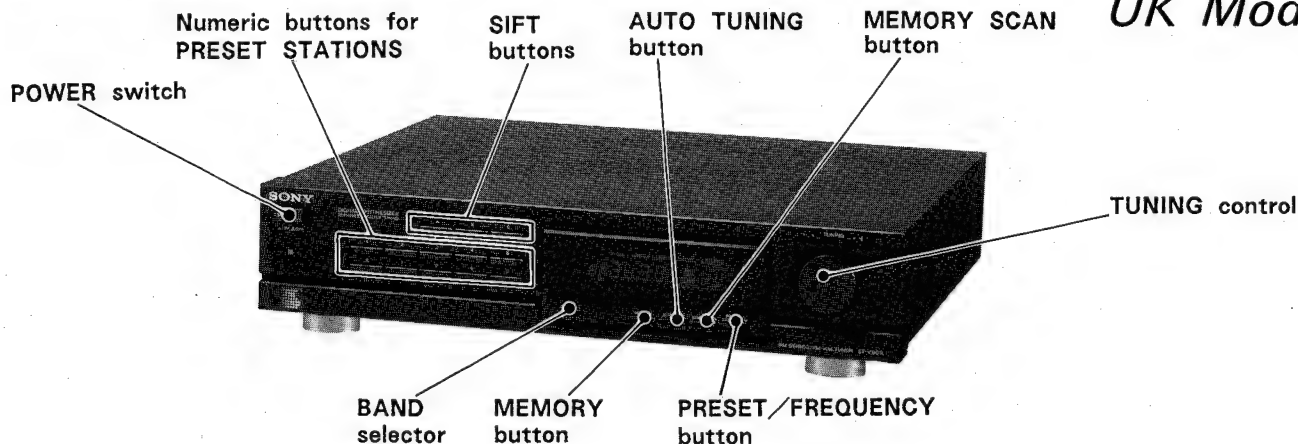
Ref.No	Part No.	Description			
R906	1-249-425-11	CARBON	4.7K	5%	1/4W
RV41A	1-228-989-00	RES, ADJ, CARBON 470			
RV41B	1-228-990-00	RES, ADJ, CARBON 1K			
RV42	1-230-497-11	RES, ADJ, CARBON 22K			
RV61A	1-228-989-00	RES, ADJ, CARBON 470			
RV61B	1-228-990-00	RES, ADJ, CARBON 1K			
RV62	1-230-497-11	RES, ADJ, CARBON 22K			
RV102	1-228-994-00	RES, ADJ, CARBON 10K			
RV202	1-228-994-00	RES, ADJ, CARBON 10K			
RV501	1-238-300-11	RES, VAR, CARBON 10K/10K (REC LEVEL)			
RY81B	1-515-614-11	RELAY			
S11A	1-571-281-21	SWITCH, LEAF (HALF DET)			
S11B	1-571-281-21	SWITCH, LEAF (HALF DET)			
S12B	1-571-281-21	SWITCH, LEAF (ERASE PROOF : SIDE A)			
S13B	1-571-281-21	SWITCH, LEAF (ERASE PROOF : SIDE B)			
S14A	1-571-281-21	SWITCH, LEAF (CrO2)			
S14B	1-571-281-21	SWITCH, LEAF (CrO2)			
S15B	1-571-281-21	SWITCH, LEAF (METAL)			
S501	1-571-520-21	SWITCH, SLIDE (DOLBY NR)			
S502	1-571-520-21	SWITCH, SLIDE (DIRECTION MODE)			
S503	1-571-520-21	SWITCH, SLIDE (MODE)			
S504	1-570-103-21	SWITCH, PUSH (1 KEY) (POWER)			
S801	1-554-303-21	SWITCH, KEY BOARD (AMS/BLANK SKIP)			
S802	1-554-303-21	SWITCH, KEY BOARD (HIGH SPEED)			
S803	1-554-303-21	SWITCH, KEY BOARD (NORM SPEED)			
S804	1-554-303-21	SWITCH, KEY BOARD (AUTO CD SYNCHRO)			
S805	1-554-303-21	SWITCH, KEY BOARD (AUTO PAUSE)			
S806	1-554-303-21	SWITCH, KEY BOARD (◀ (DECK A))			
S807	1-554-303-21	SWITCH, KEY BOARD (▶ (DECK A))			
S808	1-554-303-21	SWITCH, KEY BOARD (■ (DECK A))			
S809	1-554-303-21	SWITCH, KEY BOARD (PAUSE (DECK A))			
S810	1-554-303-21	SWITCH, KEY BOARD (▶ (DECK A))			
S811	1-554-303-21	SWITCH, KEY BOARD (◀ (DECK A))			
S812	1-554-303-21	SWITCH, KEY BOARD (◀ (DECK B))			
S813	1-554-303-21	SWITCH, KEY BOARD (▶ (DECK B))			
S814	1-554-303-21	SWITCH, KEY BOARD (REC (DECK B))			
S815	1-554-303-21	SWITCH, KEY BOARD (■ (DECK B))			
S816	1-554-303-21	SWITCH, KEY BOARD (PAUSE (DECK B))			
S817	1-554-303-21	SWITCH, KEY BOARD (▶ (DECK B))			
S818	1-554-303-21	SWITCH, KEY BOARD (◀ REC MUTE (DECK B))			
S819	1-554-303-21	SWITCH, KEY BOARD (○ REC MUTE (DECK B))			
S820	1-554-303-21	SWITCH, KEY BOARD (CCLA)			
S821	1-554-303-21	SWITCH, KEY BOARD (DECK A/B)			
S822	1-554-303-21	SWITCH, KEY BOARD (MEMORY)			
S823	1-554-303-21	SWITCH, KEY BOARD (RESET)			
S901-B	1-571-028-11	(DECK B)...SWITCH, LEAF (REC SW)			
SPK101	1-235-186-00	ENCAPSULATED COMPONENT			
SPK201	1-235-186-00	ENCAPSULATED COMPONENT			
T51	1-433-335-11	TRANSFORMER, BIAS OSCILLATION			
T71	1-433-335-11	TRANSFORMER, BIAS OSCILLATION			
T81B	1-433-336-11	TRANSFORMER, BIAS OSCILLATION			
T901	△ 1-449-460-11	TRANSFORMER, POWER			
TP1	*1-564-336-00	PIN, CONNECTOR 2P			
TP83B	*1-564-338-00	PIN, CONNECTOR 4P			
TP91	*1-564-508-11	PLUG, CONNECTOR 5P			
X801	1-577-358-21	VIBRATOR, CERAMIC 4MHz			
X802	1-577-360-11	VIBRATOR, CERAMIC 6MHz			

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

# ST-V901L

## SERVICE MANUAL

*AEP Model*  
*UK Model*



### SPECIFICATIONS

#### Tuner

Circuit system FM stereo, FM/AM superheterodyne tuner  
Quartz-locked PLL digital synthesizer system

#### FM tuner

Frequency range 87.5 – 108 MHz  
Antenna terminals 75 ohms unbalanced  
Intermediate frequency 10.7 MHz  
Sensitivity (at 46 dB quieting)  
19.5 dBf, 5.0  $\mu$ V (mono)  
39.5 dBf, 50  $\mu$ V (stereo)  
Signal-to-noise ratio (at 40 kHz deviation)  
75 dB (mono)  
69 dB (stereo)  
Harmonic distortion 0.5% (mono), 1.5% (stereo) at 1 kHz  
IM distortion 0.5% (mono), 1.5% (stereo)  
Separation 45 dB (at 1 kHz)  
Frequency response 40 Hz – 12.5 kHz  $\pm$ 0.5 dB  
Selectivity 55 dB (at 300 kHz)  
Capture ratio 1.0 dB  
AM suppression ratio 55 dB  
Image response ratio 40 dB  
IF response ratio 80 dB  
Spurious response ratio 80 dB  
Output 400 mV, 4.7 kohms  
(at 40 kHz deviation)

#### MW/LW tuner

	MW	LW
Tuning range	522 to 1,611 kHz (Italian model) 531 to 1,602 kHz (AEP, UK, West Germany model)	144 to 288 kHz (Italian model) 153 to 281 kHz (AEP, UK, West Germany model)
Antenna	AM loop antenna, external antenna terminal	
Intermediate frequency	450 kHz	

#### When the supplied AM loop antenna is used.

	MW	LW
Usable sensitivity	(999 kHz) 500 $\mu$ V/m	(230 kHz) 700 $\mu$ V/m
Signal-to-noise ratio	(999 kHz) 54 dB	(230 kHz) 50 dB
Harmonic distortion (400 Hz)	0.3%	0.3%
Selectivity (9 kHz)	35 dB	35 dB

— Continued on page 2 —

FM STEREO/FM-AM TUNER  
**SONY**®



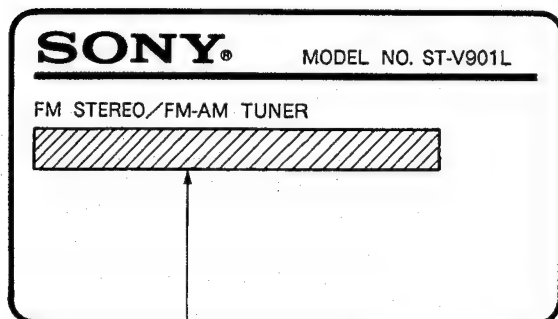
## General

Power requirements	U K model: 240V AC, 50/60 Hz AEP, West Germany, Italian model: 220V AC, 50/60 Hz
Power consumption	10 W
AC outlet	2 unswitched, max. 100W
Dimensions	Approx. 355 × 82 × 324 mm (w/h/d) (14 × 3 1/4 × 12 7/8 inches)
Weight	Approx. 2.3 kg (5 lb 2 oz)
Accessories supplied	Connecting cord (1) FM antenna (1) (Except for West Germany model) AM loop antenna (1) RM-S920 remote commander (1) Sony SUM-3 (NS) batteries (2) Flat cord with 3-pin connectors (2)

## SECTION 1 SERVICING NOTES



### MODEL IDENTIFICATION

—Specification Label—



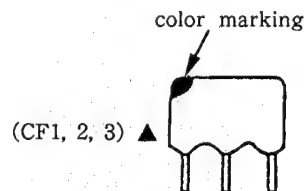
AEP model :	} AC : 220V~50/60Hz
West Germany	
(WG) model :	
Italian (IT) model :	
UK model :	AC : 240V~50/60Hz

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### Note on Ceramic Filter (CF1, 2, 3) ▲ Replacement.

This set employs three ceramic filters (CF1, 2, 3) ▲ which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by \* D613, \* D614 is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



○ : Mounted  
× : not Mounted

Ceramic filter		Mount		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	* D613	* D614	
White	10,750	×	○	10,750
Red	10,700	×	×	10,700
Black	10,650	○	×	10,650

FM intermediate frequency is determined by the three types as shown above, Ceramic filters of same center frequency, i. e., of same color coding should be used for CF1, CF2 and CF3.

When replacing the ceramic filters, perform the FM Discriminator Adjustment.

▲ : AEP, UK Model : CF1, 2  
WG, IT Model : CF1, 2, 3

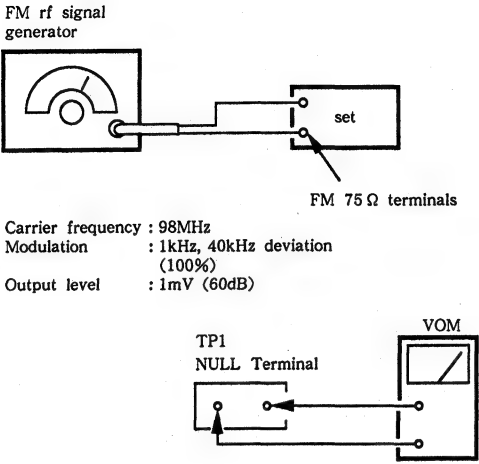


# SECTION 2 ELECTRICAL ADJUSTMENTS

## FM SECTION

### FM DISCRIMINATOR ADJUSTMENT

Setting :

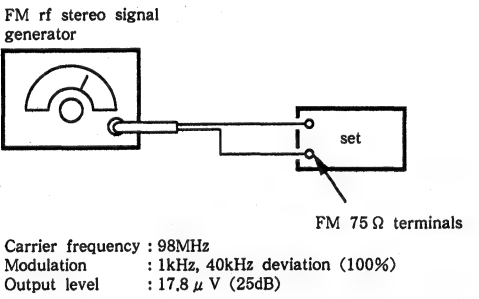


Procedure :

1. Tune the set to 98MHz.
  2. Adjust T21 for 0V reading on the VOM.
- Note : FM tuning level adjustment should be made after FM discriminator alignment.

### FM TUNING LEVEL ADJUSTMENT

Setting :

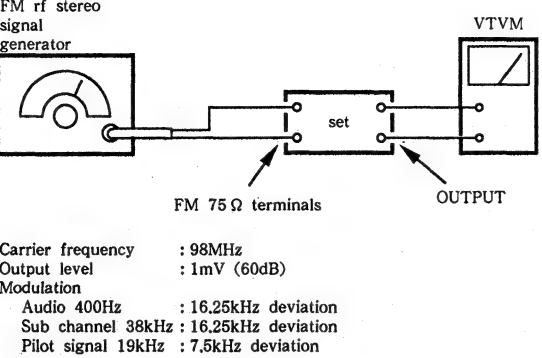


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the TUNED LED goes on.

### FM STEREO SEPARATION ADJUSTMENT

Procedure :



FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RV21 for minimum reading
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RV21 for minimum reading

L-CH Stereo separation : (A) – (B)  
R-CH Stereo separation : (C) – (D)

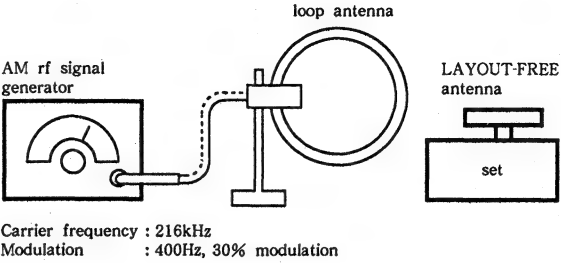
The separations of both channels should be equal.

## MW/LW SECTION

### AM TUNING LEVEL ADJUSTMENT

BAND select switch : LW

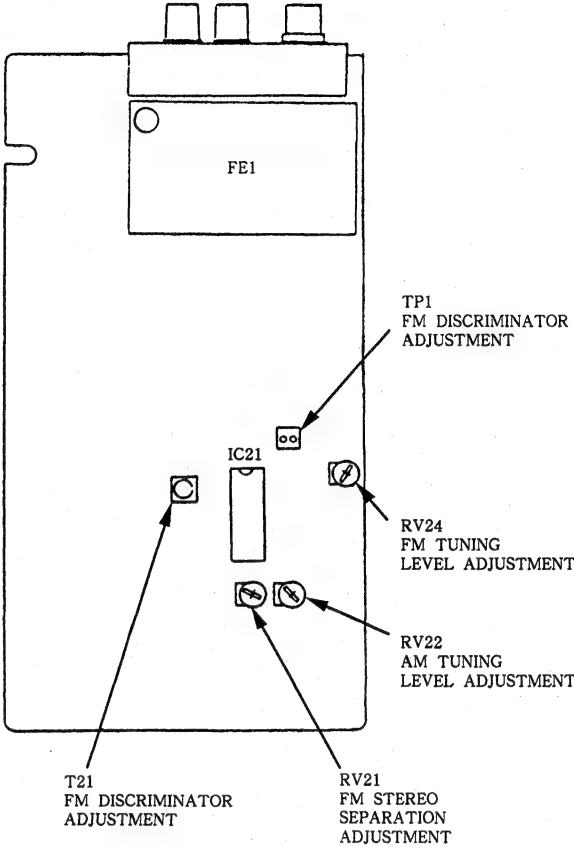
Setting :



Procedure :

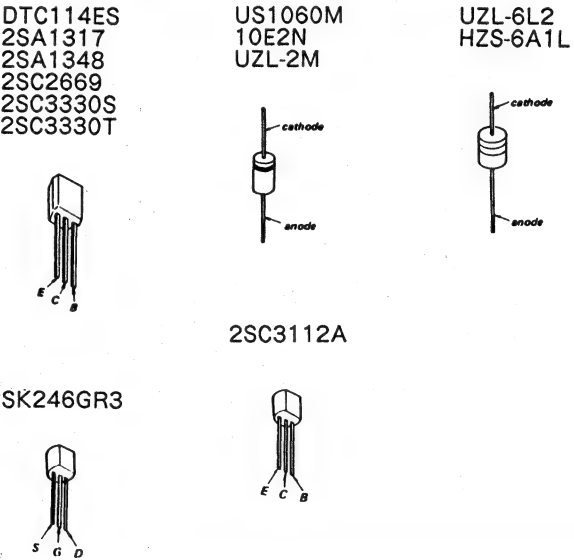
1. Set loop antenna so that the LAYOUT-FREE antenna input level becomes 2.5mV/m (68dB).
2. Tune the set to 216kHz.
3. Adjust the RV22 so that the TUNED LED goes on.

Adjustment Location :  
– tuner board –



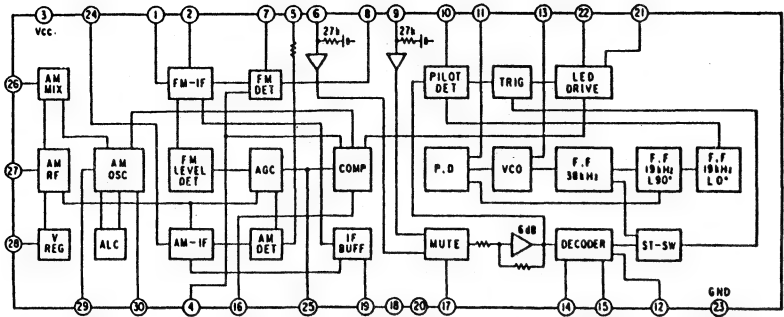
## SECTION 3 DIAGRAMS

### 3-1. SEMICONDUCTOR LEAD LAYOUTS

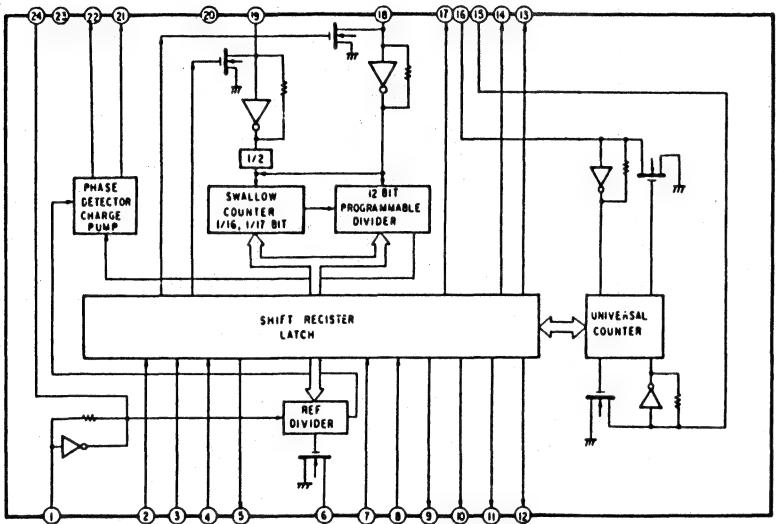


3-2. IC BLOCK DIAGRAMS

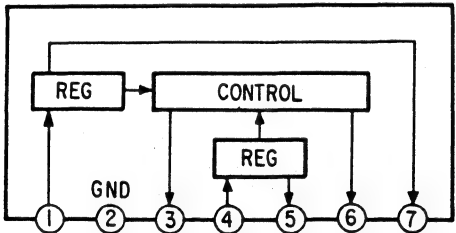
IC21 LA1851N



IC81 LC7218



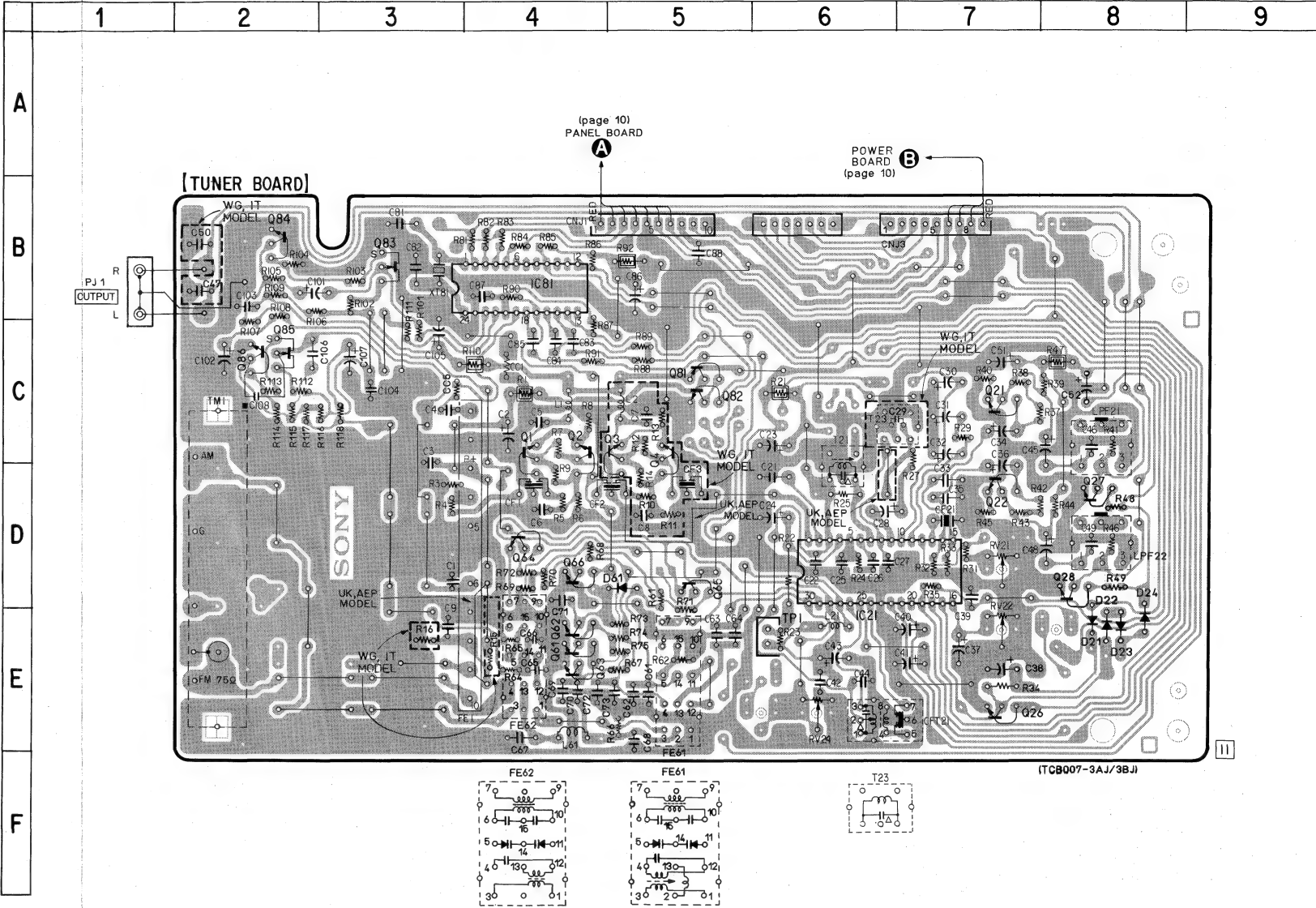
IC701 LA5667



3-3. TUNER SECTION PRINTED WIRING BOARD

• Semiconductor Location

Ref. No.	Location
IC21	D-6
IC81	B-4
Q1	C-4
Q2	C-4
Q3	C-5
Q4	C-5
Q21	C-7
Q22	D-7
Q26	E-7
Q27	D-8
Q28	D-8
Q61	E-4
Q62	E-4
Q63	E-4
Q64	D-4
Q65	D-5
Q66	D-4
Q81	C-5
Q82	C-5
Q83	B-3
Q84	B-2
Q85	C-2
Q86	C-2
D21	E-8
D22	E-8
D23	E-8
D24	E-8
D61	D-5



Note on Printed Wiring Boards

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : indicates side identified with part number.
- WG : West Germany model
- IT : Italian model

Note on Schematic Diagram

- \*D613, \*D614 : See page 2 for Note on Ceramic Filter (CF1, 2, 3) ▲ Replacement.
- All capacitors are in  $\mu F$  unless otherwise noted. pF :  $\mu \mu F$
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
- $\Delta$  : internal component.
- $\square$  : nonflammable resistor.
- B+ : B+ Line
- B- : B- Line
- $\square$  : adjustment for repair.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- ( ) : AM
- < > : LW
- Voltages are taken with a VOM (Input impedance 10M  $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\Rightarrow$  : FM
- WG : West Germany model
- IT : Italian model

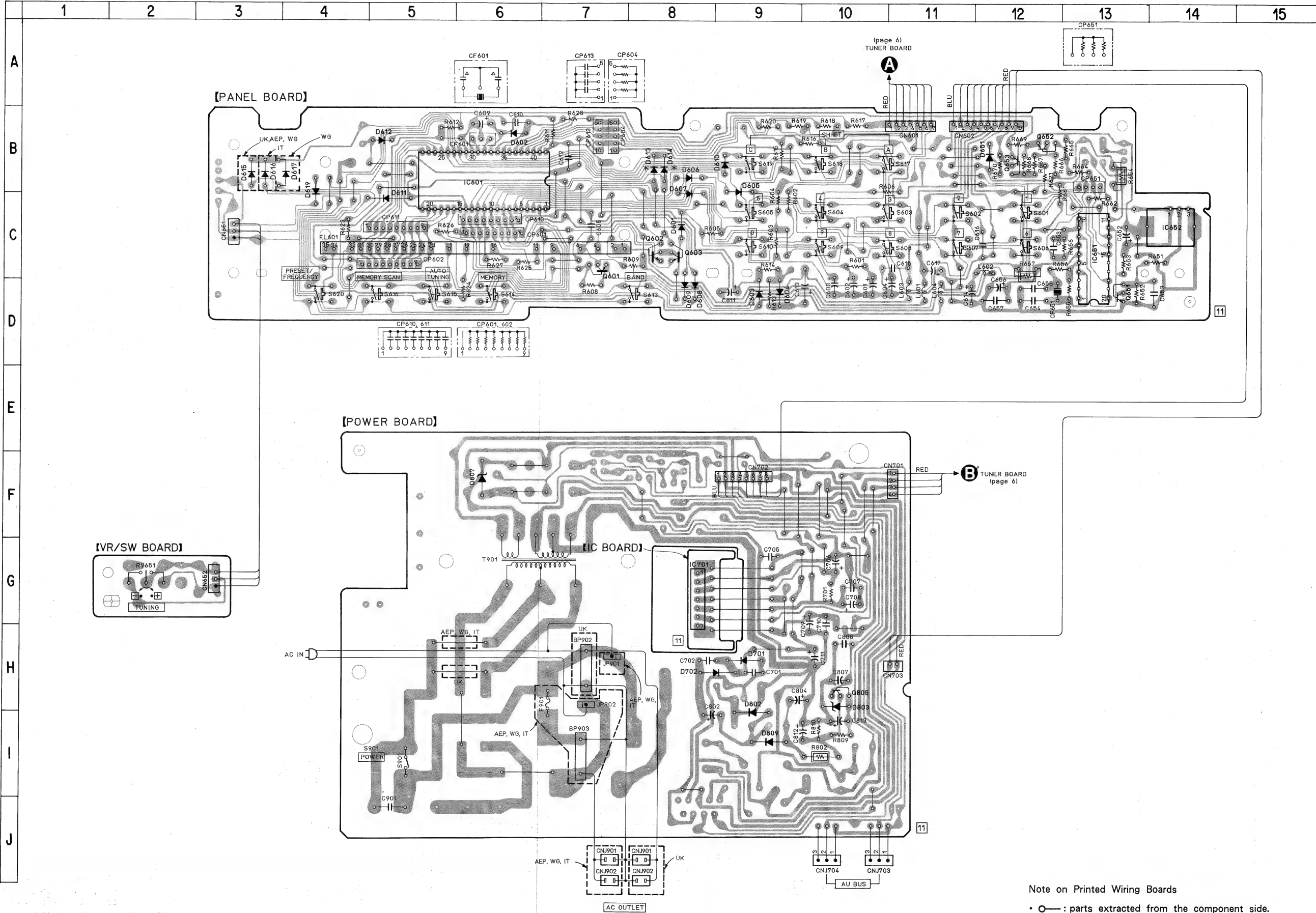
— 7 —

— 8 —

3-5. CONTROL AND POWER SUPPLY SECTION PRINTED WIRING BOARDS

• Semiconductor Locatio

Ref. No.	Location
IC601	B-6
IC651	C-13
IC652	C-14
IC701	F-9
Q601	C-7
Q602	C-8
Q603	C-8
Q651	D-13
Q652	B-13
Q653	B-12
Q805	H-10
D601	C-8
D602	B-6
D603	D-9
D604	D-9
D605	B-9
D606	B-8
D607	B-8
D608	D-8
D609	D-8
D610	B-9
D611	C-5
D612	B-5
D613	B-8
D614	B-8
D615	B-3
D616	B-4
D617	B-4
D619	B-4
D651	B-12
D701	H-9
D702	H-9
D802	I-9
D803	H-10
D807	F-6
D809	I-9



Note on Printed Wiring Boards

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : indicates side identified with part number.
- WG : West Germany model
- IT : Italian model



[illegible]

A vertical scale from 0 to 10. The scale is marked with horizontal lines at each integer. The labels A through J are placed to the left of the scale, aligned with the tick marks. A horizontal dashed line is drawn across the scale at the 5 mark, which is labeled 'I'.

**A**

---

**B**

---

**C**

---

**D**

---

**E**

---

**F**

---

**G**

---

**H**

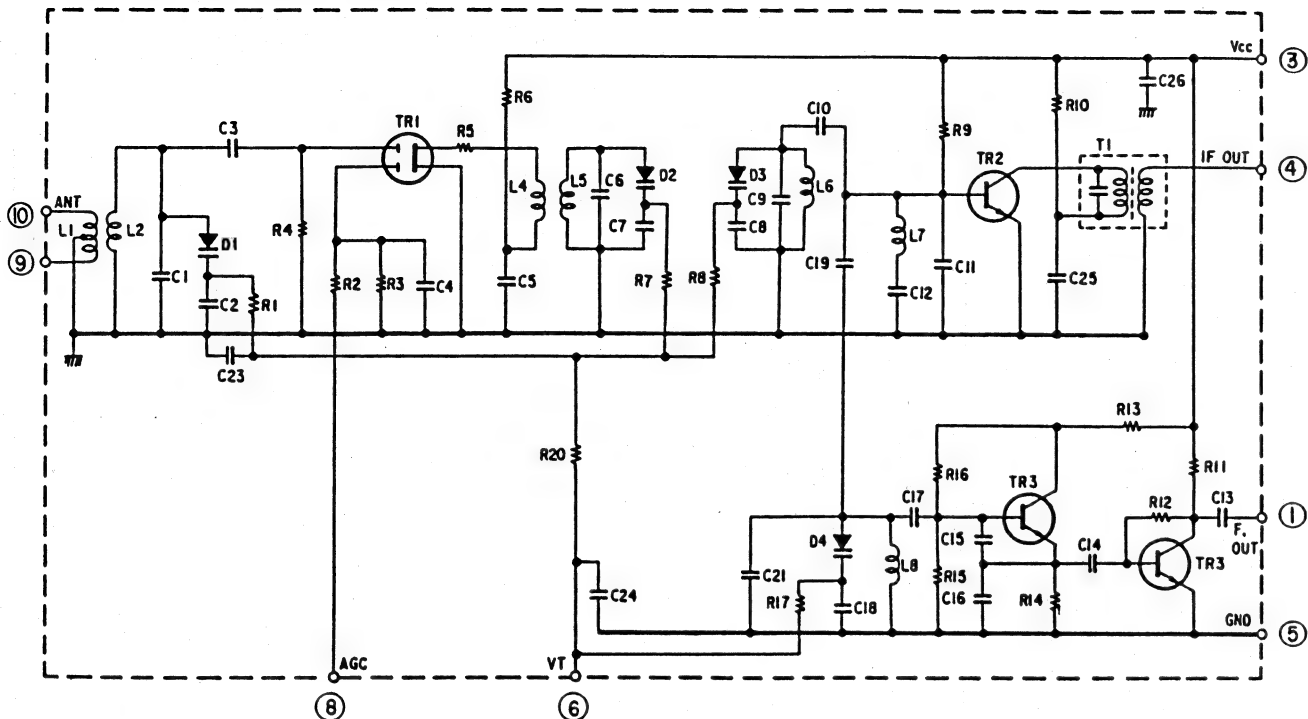
---

**I**

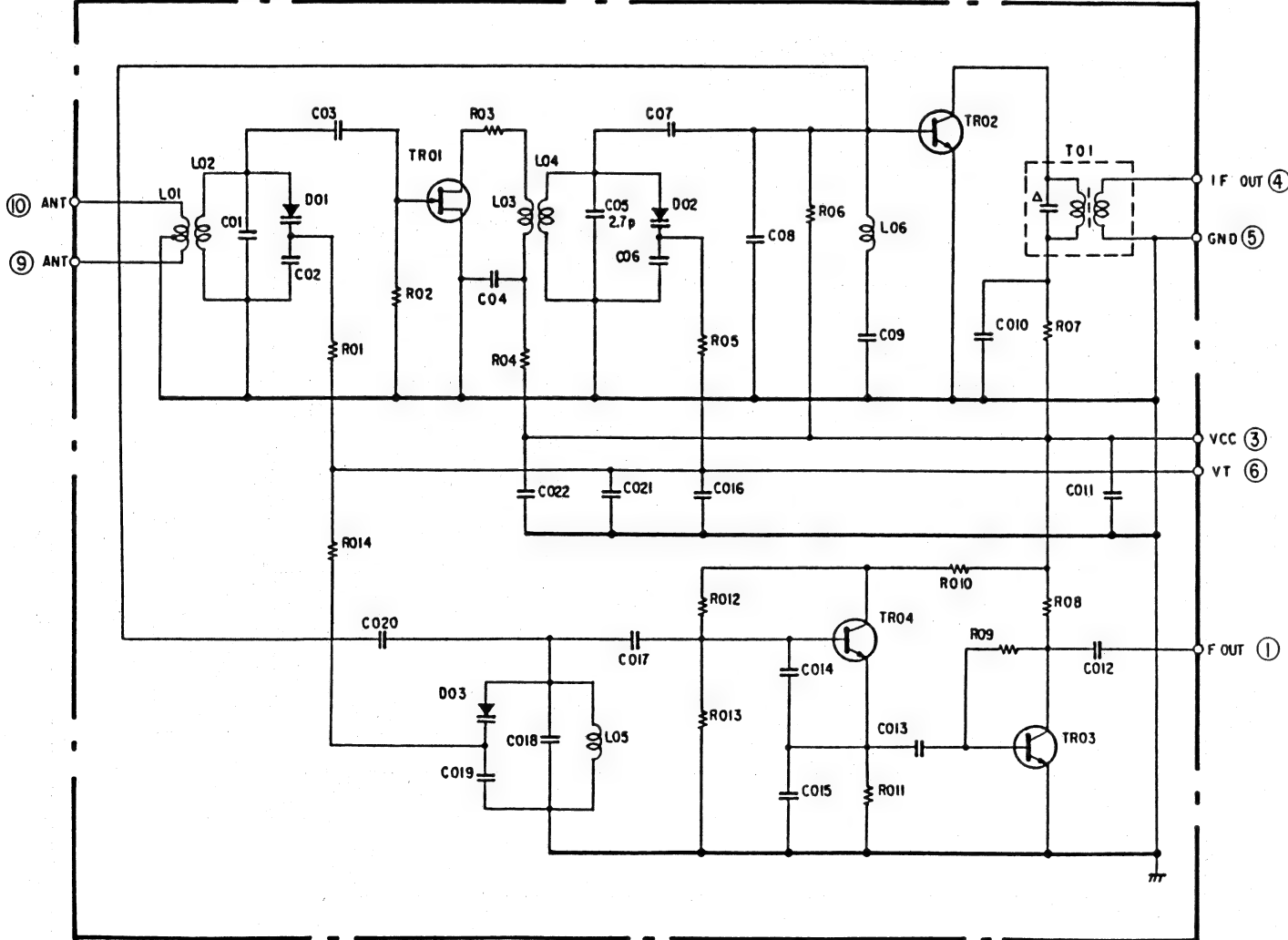
---

**J**

3-7. FM FRONT-END SCHEMATIC DIAGRAMS  
FE1 (West Germany, Italian Model)



FE1 (AEP, UK Model)





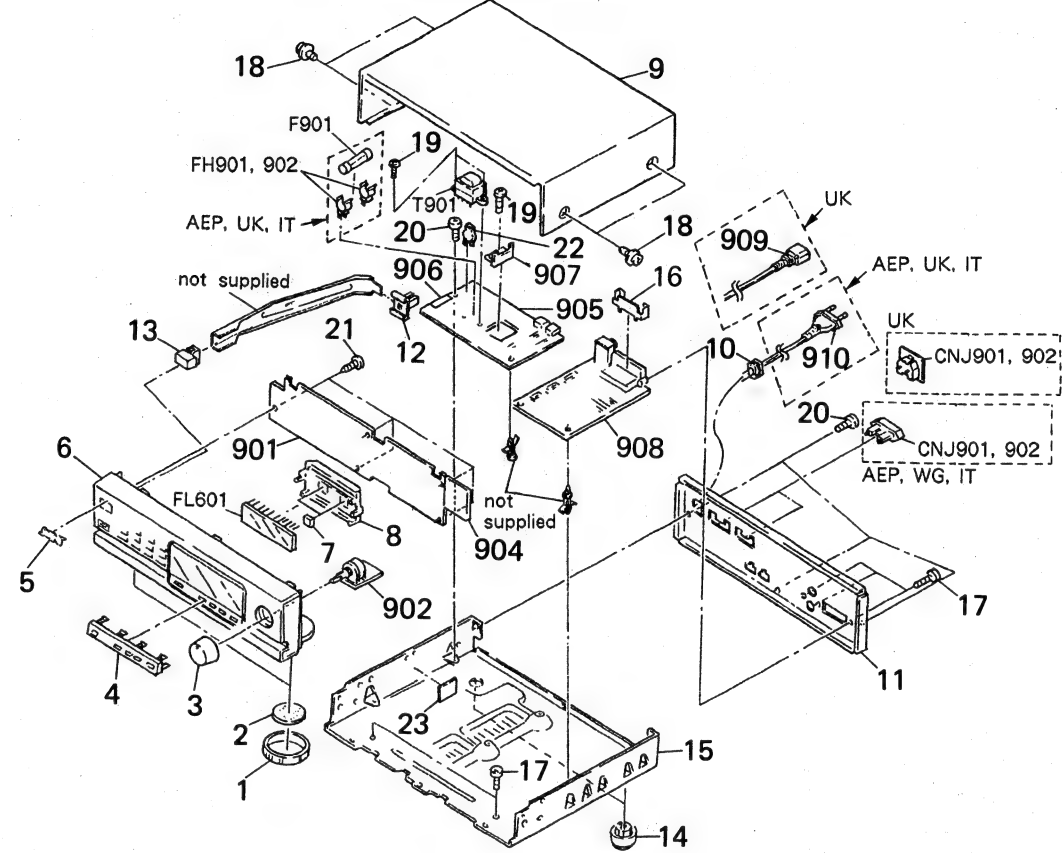
SECTION 4  
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color
- WG: West Germany model  
• IT : Italian model

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-4917-252-1	PLATE (LEG) ASSY, ORNAMENTAL	2	901	*A-4333-390-A *A-4333-392-A *A-4333-393-A	(AEP,UK)...MOUNTED PCB, PANEL (WG).....MOUNTED PCB, PANEL (IT).....MOUNTED PCB, PANEL	902,904 902,904 902,904
2	4-928-401-01	FELT		902	*1-631-098-11	PC BOARD, VR/SW	
3	4-925-170-01	KNOB (VOL)		904	*1-631-097-11	PC BOARD, TUNING	
4	4-925-176-11	PLATE, ORNAMENTAL		905	*1-631-100-11	PC BOARD, POWER	
5	4-925-161-21	EMBLEM (4-A), SONY		906	*1-631-102-11	PC BOARD, CONNECTOR	
6	X-4917-270-1	PANEL (L) ASSY, FRONT		907	*1-631-101-11	PC BOARD, IC	
7	*4-921-941-21	CUSHION (FL)		908	*A-4303-208-A *A-4303-209-A	(AEP,UK)...MOUNTED PCB, TUNER(TCB007-3AJ) (WG,IT)....MOUNTED PCB, TUNER(TCB007-3BJ)	
8	*4-923-103-01	HOLDER, FL TUBE		909	▲1-556-562-00	(UK).....CORD, POWER	
9	4-919-389-12	CASE		910	▲1-555-750-00	(AEP,WG,IT)....CORD, POWER	
10	*3-703-244-00	BUSHING (2104), CORD		CNJ901▲	526-751-00	(UK).....OUTLET, AC	
11	*4-928-480-11 *4-928-480-21 *4-928-480-41	(AEP,IT)...PANEL, BACK (UK).....PANEL, BACK (WG).....PANEL, BACK		CNJ901▲	526-794-11	(AEP,WG,IT)....OUTLET, AC	
12	4-866-342-00	JOINT (B), KNOB		CNJ902▲	526-751-00	(UK).....OUTLET, AC	
13	4-921-919-01	BUTTON (P)		CNJ902▲	526-794-11	(AEP,WG,IT)....OUTLET, AC	
14	X-4917-254-1	FOOT ASSY		F901	▲1-532-203-00	(AEP,WG,IT)....FUSE, TIME-LAG 2A	
15	*4-924-520-01	CHASSIS		FH901	1-533-183-11	(AEP,WG,IT)....HOLDER, FUSE	
16	*4-924-988-11	PLATE (ST), GROUND		FH902	1-533-183-11	(AEP,WG,IT)....HOLDER, FUSE	
17	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		FL601	1-519-512-11	INDICATOR TUBE, FLUORESCENT	
18	3-704-366-01	SCREW (CASE) (M3X8)		T901	▲1-449-196-11	TRANSFORMER, POWER	
19	7-682-549-04	SCREW +BVTT 3X10 (S)					
20	7-682-547-04	SCREW +BVTT 3X6 (S)					
21	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S					
22	*4-875-455-31	COVER (DIA. 20), CAPACITOR (C901)					
23	9-911-841-XX	CUSHION					

## SECTION 5

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**In each case, U:  $\mu$ , for example:UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,UPC...:  $\mu$ PC, UPD...:  $\mu$ PD...

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

- WG: West Germany model
- IT : Italian model

Ref.No.	Part No.	Description				
901	*A-4333-390-A	(AEP,UK)...MOUNTED PCB, PANEL	902,904			
	*A-4333-392-A	(WG).....MOUNTED PCB, PANEL	902,904			
	*A-4333-393-A	(IT).....MOUNTED PCB, PANEL	902,904			
902	*1-631-098-11	PC BOARD, VR/SW				
904	*1-631-097-11	PC BOARD, TUNING				
905	*1-631-100-11	PC BOARD, POWER				
906	*1-631-102-11	PC BOARD, CONNECTOR				
907	*1-631-101-11	PC BOARD, IC				
908	*A-4303-208-A	(AEP,UK)..MOUNTED PCB, TUNER(TCB007-3AJ)				
	*A-4303-209-A	(WG,IT)...MOUNTED PCB, TUNER(TCB007-3BJ)				
909	$\Delta$ 1-556-562-00	(UK).....CORD, POWER				
910	$\Delta$ 1-555-750-00	(AEP,WG,IT)...CORD, POWER				
BP902	*1-535-139-00	(UK)....BASE POST 22MM (10MM PITCH) 2P				
BP903	*1-535-139-00	(AEP,WG,IT) ...BASE POST 22MM (10MM PITCH) 2P				
C1	1-162-294-31	CERAMIC CHIP 0.001MF	20%	25V		
C2	1-124-477-11	ELECT 47MF	20%	16V		
C3	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C4	1-162-294-31	CERAMIC CHIP 0.001MF	20%	25V		
C5	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C6	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C7	1-163-059-00	(WG,IT)...CERAMIC MELF 0.01MF	20%	16V		
C8	1-163-059-00	(WG,IT)...CERAMIC MELF 0.01MF	20%	16V		
C9	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C21	1-101-006-00	CERAMIC 0.047MF	20%	50V		
C22	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C23	1-124-477-11	ELECT 47MF	20%	16V		
C24	1-123-382-00	ELECT 3.3MF	20%	50V		
C25	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C26	1-163-019-00	CERAMIC CHIP 0.0068MF	20%	12V		
C27	1-162-516-11	(AEP,UK)...CERAMIC CHIP 100PF	10%	50V		
C27	1-162-521-11	(WG,IT)....CERAMIC CHIP 680PF	20%	50V		
C28	1-124-499-11	ELECT 1.0MF	20%	50V		
C29	1-162-516-11	(WG,IT)....CERAMIC CHIP 100PF	10%	50V		
C30	1-124-499-11	ELECT 1.0MF	20%	50V		
C31	1-124-902-00	ELECT 0.47MF	20%	50V		
C32	1-124-463-00	ELECT 0.1MF	20%	50V		
C33	1-130-481-00	PE TEREPHTHALATE 0.0068MF	5%	50V		
C34	1-123-382-00	ELECT 3.3MF	20%	50V		
C35	1-130-481-00	PE TEREPHTHALATE 0.0068MF	5%	50V		
C36	1-123-382-00	ELECT 3.3MF	20%	50V		
C37	1-123-875-11	ELECT 10MF	20%	50V		
C38	1-123-875-11	ELECT 10MF	20%	50V		
C39	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C40	1-124-463-00	ELECT 0.1MF	20%	50V		
C41	1-124-927-11	ELECT 4.7MF	20%	50V		
C42	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C43	1-126-176-11	ELECT 220MF	20%	10V		
C44	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C45	1-123-382-00	ELECT 3.3MF	20%	50V		
C46	1-161-375-00	CERAMIC CHIP 0.0022MF	20%	25V		
C47	1-162-294-31	(WG,IT)....CERAMIC CHIP 0.001MF	20%	50V		
C48	1-123-382-00	ELECT 3.3MF	20%	50V		
C49	1-161-375-00	CERAMIC CHIP 0.0022MF	20%	25V		
C50	1-162-294-31	(WG,IT)....CERAMIC CHIP 0.001MF	20%	50V		
C51	1-124-477-11	ELECT 47MF	20%	16V		
C52	1-124-252-00	ELECT 0.33MF	20%	50V		
C61	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C62	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C63	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C64	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C65	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C66	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C67	1-102-120-00	CERAMIC 0.0018MF	10%	50V		
C68	1-163-011-11	CERAMIC CHIP 0.0015MF	20%	25V		
C69	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C70	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C71	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C72	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C73	1-163-063-00	CERAMIC MELF 0.022MF		25V		
C81	1-102-961-00	CERAMIC 27PF	5%	50V		
C82	1-102-961-00	CERAMIC 27PF	5%	50V		
C83	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C84	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C85	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C86	1-124-477-11	ELECT 47MF	20%	16V		
C87	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C88	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C101	1-124-925-11	ELECT 2.2MF	20%	50V		
C102	1-124-463-00	ELECT 0.1MF	20%	50V		
C103	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C104	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		
C105	1-124-477-11	ELECT 47MF	20%	16V		
C106	1-136-173-00	METALIZED FILM 0.47MF	5%	50V		
C107	1-124-463-00	ELECT 0.1MF	20%	50V		
C108	1-101-005-00	CERAMIC 0.022MF		50V		
C601	1-126-157-11	ELECT 10MF	20%	16V		
C602	1-124-463-00	ELECT 0.1MF	20%	50V		
C603	1-124-463-00	ELECT 0.1MF	20%	50V		

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description
C604	1-124-463-00	ELECT	0.1MF	20%	50V	CNJ902A	1-526-751-00	(UK).....OUTLET, AC
C605	1-162-286-31	CERAMIC	220PF	10%	50V	CNJ902A	1-526-794-11	(AEP,WG,IT)...OUTLET, AC
C609	1-126-094-11	ELECT	4.7MF	20%	35V			
C610	1-161-379-00	CERAMIC	0.01MF	30%	16V	CP601	1-233-138-11	COMPOSITION CIRCUIT BLOCK
C611	1-126-157-11	ELECT	10MF	20%	16V	CP602	1-233-138-11	COMPOSITION CIRCUIT BLOCK
C612	1-161-379-00	CERAMIC	0.01MF	30%	16V	CP604	1-232-986-11	COMPOSITION CIRCUIT BLOCK
C613	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V	CP610	1-233-151-11	COMPOSITION CIRCUIT BLOCK
C614	1-124-589-11	ELECT	47MF	20%	10V	CP611	1-233-151-11	COMPOSITION CIRCUIT BLOCK
C615	1-164-097-11	CERAMIC	0.022MF		50V	CP613	1-233-150-11	COMPOSITION CIRCUIT BLOCK
C616	1-164-097-11	CERAMIC	0.022MF		50V	CP651	1-232-995-11	COMPOSITION CIRCUIT BLOCK
C617	1-123-357-00	ELECT	22MF	20%	35V	D21	8-719-000-26	DIODE US1060M
C652	1-124-589-11	ELECT	47MF	20%	10V	D22	8-719-000-26	DIODE US1060M
C653	1-162-282-31	CERAMIC	100PF	10%	50V	D23	8-719-000-26	DIODE US1060M
C654	1-162-211-31	CERAMIC	33PF	5%	50V	D24	8-719-000-26	DIODE US1060M
C655	1-162-211-31	CERAMIC	33PF	5%	50V	D61	8-719-000-26	DIODE US1060M
C656	1-126-154-11	ELECT	47MF	20%	6.3V	D602	8-719-000-26	DIODE US1060M
C657	1-161-379-00	CERAMIC	0.01MF	30%	16V	D603	8-719-000-26	DIODE US1060M
C658	1-162-282-31	CERAMIC	100PF	10%	50V	D604	8-719-000-26	DIODE US1060M
C701	1-101-004-00	CERAMIC	0.01MF		50V	D605	8-719-000-26	DIODE US1060M
C702	1-101-004-00	CERAMIC	0.01MF		50V	D606	8-719-000-26	DIODE US1060M
C705	1-101-005-00	CERAMIC	0.022MF		50V	D607	8-719-000-26	DIODE US1060M
C706	1-124-927-11	ELECT	4.7MF	20%	50V	D608	8-719-000-26	DIODE US1060M
C707	1-101-005-00	CERAMIC	0.022MF		50V	D609	8-719-000-26	DIODE US1060M
C708	1-124-910-11	ELECT	47MF	20%	50V	D610	8-719-000-26	DIODE US1060M
C709	1-124-910-11	ELECT	47MF	20%	50V	D611	8-719-000-26	DIODE US1060M
C710	1-101-005-00	CERAMIC	0.022MF		50V	D612	8-719-000-26	DIODE US1060M
C711	1-126-105-11	ELECT	1000MF	20%	35V	D613	8-719-000-26	DIODE US1060M
C802	1-124-572-11	ELECT	100MF	20%	63V	D614	8-719-000-26	DIODE US1060M
C804	1-124-572-11	ELECT	100MF	20%	63V	D615	8-719-000-26	(AEP,UK,WG)...DIODE US1060M
C807	1-124-910-11	ELECT	47MF	20%	35V	D616	8-719-000-26	(IT).....DIODE US1060M
C808	1-101-004-00	CERAMIC	0.01MF		50V	D617	8-719-000-26	(WG).....DIODE US1060M
C812	1-124-261-00	ELECT	10MF	20%	50V	D619	8-719-000-26	DIODE US1060M
C813	1-124-261-00	ELECT	10MF	20%	50V	D651	8-719-000-26	DIODE US1060M
C901	1-161-744-00	CERAMIC	0.01MF		400V	D701	8-719-200-77	DIODE 10E2N
CC1	1-249-366-11	CARBON MELF	0	5%	1/5W	D702	8-719-200-77	DIODE 10E2N
CC5	1-249-997-11	CARBON MELF	0	5%	1/8W	D802	8-719-200-77	DIODE 10E2N
CF1	1-567-389-11	FILTER, CERAMIC (10.7MHz)				D803	8-719-002-45	DIODE UZL-27M
CF2	1-567-389-11	FILTER, CERAMIC (10.7MHz)				D807	8-719-000-51	(AEP,WG,IT)...DIODE UZL-6L2
CF3	1-567-389-11	(WG,IT)...FILTER, CERAMIC (10.7MHz)				D807	8-719-933-33	(UK).....DIODE HZS6A1L
CF21	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)				D809	8-719-200-77	DIODE 10E2N
CF601	1-577-358-21	VIBRATOR, CERAMIC (4MHz)				F901	1-532-203-00	(AEP,WG,IT)...FUSE, TIME-LAG 2A
CF651	1-567-839-11	VIBRATOR, CERAMIC (3MHz)				FE1	1-463-857-11	(WG,IT)....FRONT END, FM
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)				FE1	1-463-862-21	(AEP,UK)...FRONT END, FM
CN601	1-568-282-11	SOCKET, CONNECTOR 7P				FE61	1-236-462-11	ENCAPSULATED COMPONENT
CN602	1-568-285-11	SOCKET, CONNECTOR 10P				FE62	1-236-463-11	ENCAPSULATED COMPONENT
CN651	1-568-269-11	SOCKET, CONNECTOR 3P				FH901	1-533-183-11	(AEP,WG,IT)...HOLDER, FUSE
CN652	1-568-278-11	SOCKET, CONNECTOR 3P				FH902	1-533-183-11	(AEP,WG,IT)...HOLDER, FUSE
CN701	*1-568-308-11	SOCKET, CONNECTOR 4P				FL601	1-519-512-11	INDICATOR TUBE, FLUORESCENT
CN702	*1-568-312-21	SOCKET, CONNECTOR 8P				IC21	8-759-821-45	IC LA1851N
CN703	*1-568-268-11	SOCKET, CONNECTOR 2P				IC81	8-759-820-91	IC LC7218
CNJ1	*1-568-276-11	SOCKET, CONNECTOR 10P				IC601	8-759-234-25	IC TMP47C441AN-1672
CNJ3	*1-568-275-11	SOCKET, CONNECTOR 9P				IC651	8-759-632-31	IC M50721-127P
CNJ703	*1-565-561-11	PIN, CONNECTOR 3P (AU BUS)				IC652	8-741-161-00	IC SBX1610-51
CNJ704	*1-565-561-11	PIN, CONNECTOR 3P (AU BUS)				IC701	8-759-820-09	IC LA5667
CNJ901A	1-526-751-00	(UK).....OUTLET, AC						
CNJ901A	1-526-794-11	(AEP,WG,IT)...OUTLET, AC						

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.



Ref.No.	Part No.	Description
JP901	1-535-416-00	(AEP,WG,IT)...TERMINAL
JP902	1-535-416-00	(AEP,WG,IT)...TERMINAL
L1	1-410-645-31	MICRO INDUCTOR (100UH)
L2	1-410-645-31	(WG,IT)...MICRO INDUCTOR (100UH)
L21	1-407-500-00	MICRO INDUCTOR (4.7MMH)
L61	1-410-525-11	MICRO INDUCTOR (220UH)
L601	1-408-521-11	INDUCTOR 100UH
L602	1-408-421-00	INDUCTOR 100UH
L603	1-408-421-00	INDUCTOR 100UH
L604	1-408-421-00	INDUCTOR 100UH
LPF21	1-235-164-00	FILTER, LOW PASS
LPF22	1-235-164-00	FILTER, LOW PASS
PJ1	1-565-352-21	JACK, PIN 2P (OUT PUT)
Q1	8-729-266-93	TRANSISTOR 2SC2669
Q2	8-729-266-93	TRANSISTOR 2SC2669
Q3	8-729-266-93	(WG,IT)...TRANSISTOR 2SC2669
Q4	8-729-266-93	(WG,IT)...TRANSISTOR 2SC2669
Q21	8-729-820-23	TRANSISTOR 2SC3330S
Q22	8-729-820-23	TRANSISTOR 2SC3330S
Q26	8-729-900-80	TRANSISTOR DTC114ES
Q27	8-729-820-23	TRANSISTOR 2SC3330S
Q28	8-729-820-23	TRANSISTOR 2SC3330S
Q61	8-729-900-80	TRANSISTOR DTC114ES
Q62	8-729-900-80	TRANSISTOR DTC114ES
Q63	8-729-900-80	TRANSISTOR DTC114ES
Q64	8-729-820-23	TRANSISTOR 2SC3330S
Q65	8-729-820-16	TRANSISTOR 2SA1317S
Q66	8-729-900-80	TRANSISTOR DTC114ES
Q81	8-729-806-10	TRANSISTOR 2SA1348
Q82	8-729-900-80	TRANSISTOR DTC114ES
Q83	8-729-202-67	TRANSISTOR 2SK246GR3
Q84	8-729-201-84	TRANSISTOR 2SC3112-A
Q85	8-729-202-67	TRANSISTOR 2SK246GR3
Q86	8-729-201-84	TRANSISTOR 2SC3112-A
Q601	8-729-806-10	TRANSISTOR 2SA1348
Q602	8-729-900-80	TRANSISTOR DTC114ES
Q603	8-729-900-80	TRANSISTOR DTC114ES
Q651	8-729-820-24	TRANSISTOR 2SC3330T
Q652	8-729-820-24	TRANSISTOR 2SC3330T
Q653	8-729-820-24	TRANSISTOR 2SC3330T
Q805	8-729-821-04	TRANSISTOR 2SA1317-STU
R1	Δ 1-249-397-11	(WG,IT)...CARBON (SMALL) 22 5% 1/4W F
R1	Δ 1-249-401-11	(AEP,UK)...CARBON (SMALL) 47 5% 1/4W F
R3	1-249-329-11	CARBON MELF 330 5% 1/8W
R4	1-249-329-11	CARBON MELF 330 5% 1/8W
R5	1-249-329-11	CARBON MELF 330 5% 1/8W
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W
R7	1-249-329-11	CARBON MELF 330 5% 1/8W
R8	1-249-332-11	CARBON MELF 560 5% 1/8W
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W
R10	1-249-329-11	(WG,IT)...CARBON MELF 330 5% 1/8W
R11	1-249-350-11	(WG,IT)...CARBON MELF 18K 5% 1/8W
R12	1-249-329-11	(WG,IT)...CARBON MELF 330 5% 1/8W
R13	1-249-334-11	(WG,IT)...CARBON MELF 820 5% 1/8W
R14	1-249-352-11	(WG,IT)...CARBON MELF 27K 5% 1/8W
R15	1-249-347-11	(WG,IT)...CARBON MELF 10K 5% 1/8W
R16	1-249-343-11	(WG,IT)...CARBON MELF 4.7K 5% 1/8W
R21	Δ 1-249-404-00	CARBON (SMALL) 82 5% 1/4W F

Ref.No.	Part No.	Description
R22	1-249-433-11	CARBON (SMALL) 22K 5% 1/4W
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W
R25	1-249-428-11	CARBON (SMALL) 8.2K 5% 1/4W
R27	1-249-350-11	CARBON MELF 18K 5% 1/8W
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W
R31	1-249-331-11	CARBON MELF 470 5% 1/8W
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W
R34	1-249-425-11	CARBON (SMALL) 4.7K 5% 1/4W
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W
R39	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R40	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
R41	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
R42	1-249-359-11	CARBON MELF 100K 5% 1/8W
R43	1-249-363-11	CARBON MELF 220K 5% 1/8W
R44	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R45	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
R46	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
R47	Δ 1-249-409-11	CARBON (SMALL) 220 5% 1/4W F
R48	1-249-359-11	CARBON MELF 100K 5% 1/8W
R49	1-249-359-11	CARBON MELF 100K 5% 1/8W
R61	1-249-359-11	CARBON MELF 100K 5% 1/8W
R62	1-249-355-11	CARBON MELF 47K 5% 1/8W
R64	1-249-351-11	CARBON MELF 22K 5% 1/8W
R65	1-249-355-11	CARBON MELF 47K 5% 1/8W
R66	1-215-493-00	CARBON MELF 1M 5% 1/5W
R67	1-249-359-11	CARBON MELF 100K 5% 1/8W
R68	1-249-352-11	CARBON MELF 27K 5% 1/8W
R69	1-249-351-11	CARBON MELF 22K 5% 1/8W
R70	1-249-331-11	CARBON MELF 470 5% 1/8W
R71	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R72	1-249-351-11	CARBON MELF 22K 5% 1/8W
R73	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R74	1-249-347-11	CARBON MELF 10K 5% 1/8W
R75	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R81	1-249-335-11	CARBON MELF 1K 5% 1/8W
R82	1-249-335-11	CARBON MELF 1K 5% 1/8W
R83	1-249-335-11	CARBON MELF 1K 5% 1/8W
R84	1-249-335-11	CARBON MELF 1K 5% 1/8W
R85	1-249-347-11	CARBON MELF 10K 5% 1/8W
R86	1-249-335-11	CARBON MELF 1K 5% 1/8W
R87	1-249-347-11	CARBON MELF 10K 5% 1/8W
R88	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R89	1-249-335-11	CARBON MELF 1K 5% 1/8W
R90	1-249-347-11	CARBON MELF 10K 5% 1/8W
R91	1-249-335-11	CARBON MELF 1K 5% 1/8W
R92	Δ 1-249-401-11	CARBON (SMALL) 47 5% 1/4W F
R101	1-249-341-11	CARBON MELF 3.3K 5% 1/8W
R102	1-249-332-11	CARBON MELF 560 5% 1/8W
R103	1-249-335-11	CARBON MELF 1K 5% 1/8W
R104	1-249-328-11	CARBON MELF 270 5% 1/8W
R105	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R106	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R107	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R108	1-249-323-11	CARBON MELF 100 5% 1/8W

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				
R109	1-249-343-11	CARBON MELF	4.7K	5%	1/8W	
R110	△ 1-249-405-11	CARBON (SMALL)	100	5%	1/4W	F
R111	1-249-341-11	CARBON MELF	3.3K	5%	1/8W	
R112	1-249-332-11	CARBON MELF	560	5%	1/8W	
R113	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R114	1-249-328-11	CARBON MELF	270	5%	1/8W	
R115	1-249-351-11	CARBON MELF	22K	5%	1/8W	
R116	1-249-339-11	CARBON MELF	2.2K	5%	1/8W	
R117	1-249-343-11	CARBON MELF	4.7K	5%	1/8W	
R118	1-249-323-11	CARBON MELF	100	5%	1/8W	
R601	1-249-425-11	CARBON	4.7K	5%	1/4W	
R602	1-249-405-11	CARBON	100	5%	1/4W	
R603	1-249-429-11	CARBON	10K	5%	1/4W	
R604	1-249-405-11	CARBON	100	5%	1/4W	
R605	1-249-425-11	CARBON	4.7K	5%	1/4W	
R606	1-249-405-11	CARBON	100	5%	1/4W	
R608	1-249-433-11	CARBON	22K	5%	1/4W	
R609	1-249-441-11	CARBON	100K	5%	1/4W	
R611	1-249-441-11	CARBON	100K	5%	1/4W	
R612	1-249-441-11	CARBON	100K	5%	1/4W	
R613	1-249-417-11	CARBON	1K	5%	1/4W	
R614	1-249-405-11	CARBON	100	5%	1/4W	
R615	1-249-429-11	CARBON	10K	5%	1/4W	
R616	1-249-405-11	CARBON	100	5%	1/4W	
R617	1-249-405-11	CARBON	100	5%	1/4W	
R618	1-249-405-11	CARBON	100	5%	1/4W	
R619	1-249-405-11	CARBON	100	5%	1/4W	
R620	1-249-405-11	CARBON	100	5%	1/4W	
R621	1-249-405-11	CARBON	100	5%	1/4W	
R623	1-249-413-11	CARBON	470	5%	1/4W	
R624	1-249-413-11	CARBON	470	5%	1/4W	
R625	1-249-413-11	CARBON	470	5%	1/4W	
R626	1-249-413-11	CARBON	470	5%	1/4W	
R627	1-249-413-11	CARBON	470	5%	1/4W	
R628	1-249-405-11	CARBON	100	5%	1/4W	
R651	1-249-437-11	CARBON	47K	5%	1/4W	
R652	1-249-441-11	CARBON	100K	5%	1/4W	
R653	1-249-429-11	CARBON	10K	5%	1/4W	
R654	△ 1-249-405-11	CARBON	100	5%	1/4W	F
R655	1-247-903-00	CARBON	1M	5%	1/4W	
R656	1-249-405-11	CARBON	100	5%	1/4W	
R657	△ 1-249-405-11	CARBON	100	5%	1/4W	F
R658	1-249-441-11	CARBON	100K	5%	1/4W	
R661	1-249-441-11	CARBON	100K	5%	1/4W	
R662	1-249-405-11	CARBON	100	5%	1/4W	
R664	1-249-437-11	CARBON	47K	5%	1/4W	
R665	1-249-441-11	CARBON	100K	5%	1/4W	
R666	1-249-429-11	CARBON	10K	5%	1/4W	
R667	1-249-437-11	CARBON	47K	5%	1/4W	
R668	1-249-441-11	CARBON	100K	5%	1/4W	
R669	1-249-393-11	CARBON	10	5%	1/4W	
R670	1-249-429-11	CARBON	10K	5%	1/4W	
R701	1-249-429-11	CARBON	10K	5%	1/4W	
R802	△ 1-247-716-11	CARBON	1.8K	5%	1/4W	F
R809	1-249-437-11	CARBON	47K	5%	1/4W	
R810	1-249-437-11	CARBON	47K	5%	1/4W	

Ref.No.	Part No.	Description
RV21	1-238-013-11	(AEP,UK)...RES, ADJ, CARBON 2.2K
RV21	1-238-015-11	(WG,IT)....RES, ADJ, CARBON 4.7K
RV22	1-238-017-11	RES, ADJ, CARBON 22K
RV24	1-238-017-11	(AEP,UK)...RES, ADJ, CARBON 22K
RV24	1-238-019-11	(WG,IT)....RES, ADJ, CARBON 47K
RV651	1-571-955-11	SWITCH, ROTARY (TUNING)
S601	1-554-303-21	SWITCH, KEY BOARD (1)
S602	1-554-303-21	SWITCH, KEY BOARD (2)
S603	1-554-303-21	SWITCH, KEY BOARD (3)
S604	1-554-303-21	SWITCH, KEY BOARD (4)
S605	1-554-303-21	SWITCH, KEY BOARD (5)
S606	1-554-303-21	SWITCH, KEY BOARD (6)
S607	1-554-303-21	SWITCH, KEY BOARD (7)
S608	1-554-303-21	SWITCH, KEY BOARD (8)
S609	1-554-303-21	SWITCH, KEY BOARD (9)
S610	1-554-303-21	SWITCH, KEY BOARD (0)
S613	1-554-303-21	SWITCH, KEY BOARD (BAND)
S614	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S615	1-554-303-21	SWITCH, KEY BOARD (AUTO TUNING)
S616	1-554-303-21	SWITCH, KEY BOARD (MEMORY SCAN)
S617	1-554-303-21	SWITCH, KEY BOARD (SHIFT A)
S618	1-554-303-21	SWITCH, KEY BOARD (SHIFT B)
S619	1-554-303-21	SWITCH, KEY BOARD (SHIFT C)
S620	1-554-303-21	SWITCH, KEY BOARD (PRESET/FREQUENCY)
S901	△ 1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
T23	1-236-465-11	(WG,IT)...ENCAPSULATED COMPONENT
T901	△ 1-449-196-11	TRANSFORMER, POWER
TM1	*1-537-138-31	TERMINAL BOARD (ANT)
TP1	*1-560-060-00	PIN, CONNECTOR 2P
XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)

## ACCESSORY &amp; PACKING MATERIAL

1-465-194-11	REMOTE COMMANDER (RM-S920)
1-501-369-11	(AEP,IT,UK)...ANTENNA
1-501-374-11	ANTENNA, LOOP
1-558-543-11	CORD, CONNECTION
1-574-265-11	CORD (WITH CONNECTOR)
3-750-424-11	(AEP,UK).....MANUAL, INSTRUCTION
3-750-424-41	(AEP,WG,UK)...MANUAL, INSTRUCTION
*4-930-822-11	INDIVIDUAL CARTON
*4-930-835-01	CUSHION

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Sony Corporation

Audio Group

9-953-814-11

— 18 —

English  
89F0246-1  
Printed in Japan  
©1989.6  
Published by A/V Engineering Service Dept.

# CDP-V925E

## SERVICE MANUAL

*AEP Model*  
*UK Model*

CDP-V925E is the  
COMPACT DISC PLAYER  
section in LBT-V925CD.



Model Name Using Similar Mechanism	CDP-M97
CD Mechanism Name	CDM9-5
Base Unit Name	BU-5C

### SPECIFICATIONS

Power consumption	11 W
Dimensions	355 × 95 × 300 mm (w/h/d) (14 × 3 <sup>3</sup> / <sub>4</sub> × 11 <sup>4</sup> / <sub>5</sub> inches)
Weight	Approx. 3.7 kg (8 lb 3 oz)



COMPACT DISC PLAYER  
**SONY**®

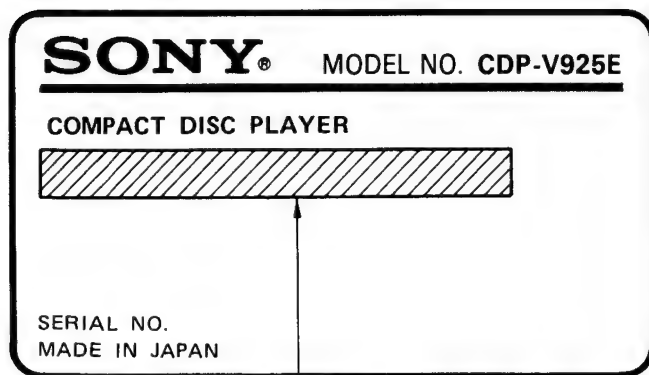
## SECTION 1 GENERAL

### TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	Specifications .....	1
	Model Identification .....	2
<b>1.</b>	<b>GENERAL</b>	
	Location of Controls .....	2
<b>2.</b>	<b>SERVICING NOTES</b> .....	3
<b>3.</b>	<b>ELECTRICAL ADJUSTMENTS</b> .....	5
<b>4.</b>	<b>DIAGRAMS</b>	
4-1.	Printed Wiring Boards .....	8
4-2.	Schematic Diagram .....	11
4-3.	Circuit Boards Location .....	15
	Semiconductor Lead Layouts .....	15
	IC Block Diagrams .....	15
<b>5.</b>	<b>EXPLODED VIEWS</b> .....	16
<b>6.</b>	<b>ELECTRICAL PARTS LIST</b> .....	19



### MODEL IDENTIFICATION

— Specifications Labels —

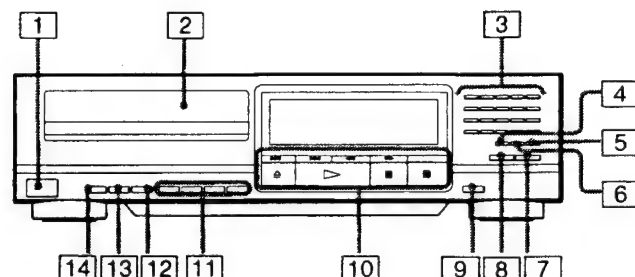


AEP, Italian model: AC: 220 V ~ 50/60 Hz 11 W  
UK model: AC: 240 V ~ 50/60 Hz 11 W

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### LOCATION OF CONTROLS



- 1** POWER switch
- 2** Disc tray
- 3** Numeric buttons
- 4** > 20 (over 20) button
- 5** CLEAR (program clear) button
- 6** CHECK (program check) button
- 7** FILE RECALL button
- 8** EDIT button
- 9** ERASE (memory erase) button
- 10** CD operation buttons
- 11** PLAY MODE buttons
- 12** REPEAT button
- 13** AUTO (automatic) SPACE button
- 14** TIME/MEMO button



## SECTION 2

### SERVICING NOTES

#### PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

##### CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

##### 1. Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output: max. 44.6  $\mu$ W\*

\* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

#### BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

##### ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

##### 1. Laser-dioe data

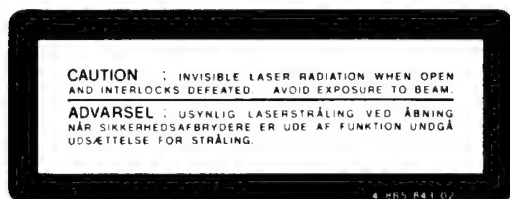
- Materiale: GaAlAs
- Bølgelængde: 780 nm
- Udstråling: Kontinuerlig
- Laseroutput: Max. 0,4 mW\*
- \* Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
- Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

#### LASER ADVARSEL MÆRKNING

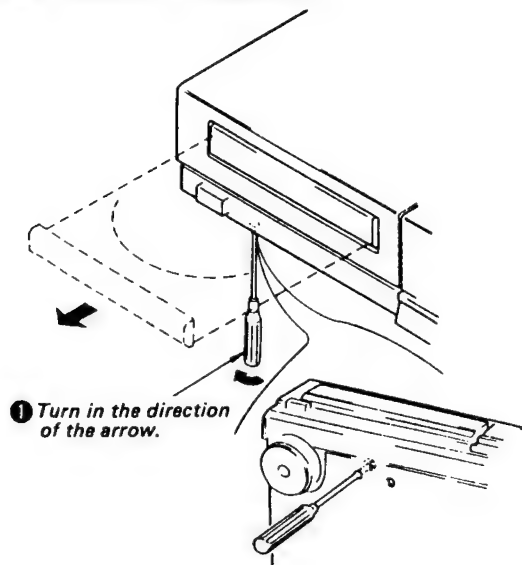
Følgende mærkning findes indvendig i apparatet:

##### 1. Advarsel Mærkning



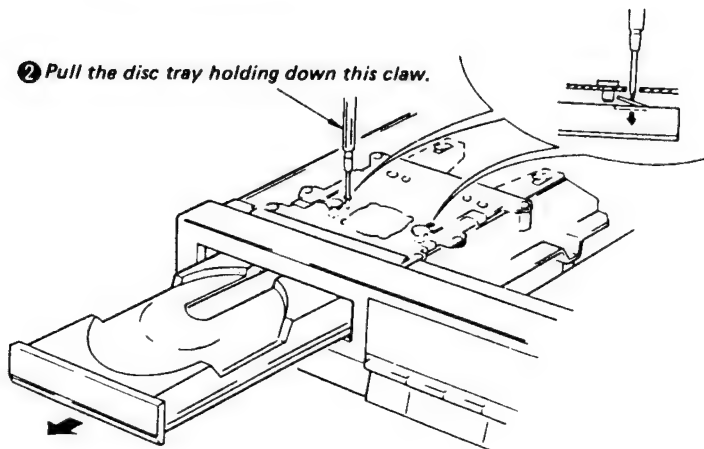
**VAROITUS:** Laite sisältää, laserdiodin, joka lähettää (näkömätöntä) silmille vaarallista lasersäteilyä.

## HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



Caution: When you work, keep the set horizontal.

## DISC TRAY REMOVAL



## NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

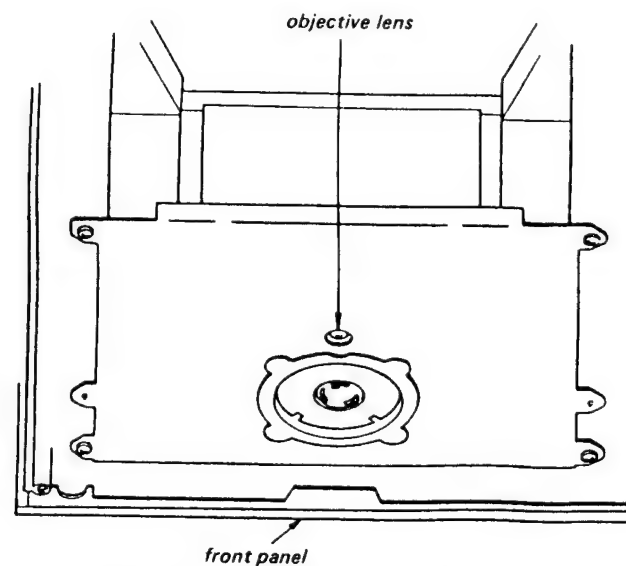
The flexible board is easily damaged and should be handled with care.

## NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

## LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objecting lens.



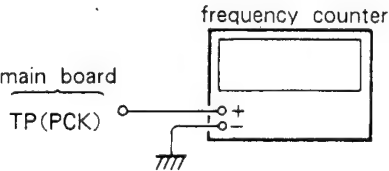
- ① Confirm that laser beam is spread.
- ② Up and down motion of the objective lens. (3 times)

SECTION 3  
ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

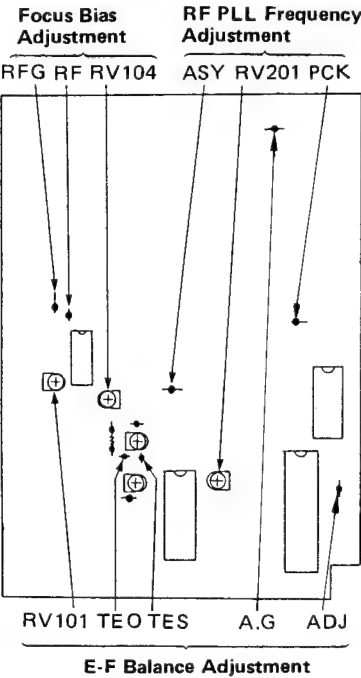
RF PLL Frequency Adjustment

Procedure :



1. Connect test point TP (ASY) to ground with jumper wire.
2. Turn POWER switch on.
3. Connect the frequency counter to test point TP (PCK).
4. Adjust RV201 so that the reading on frequency counter is 4,3218MHz±30kHz.
5. Remove lead wire connecting TP (ASY) and ground.
6. Put disc (YEDS-18) in and press ▷ button.
7. Confirm that the reading on frequency counter is 4,3218MHz.

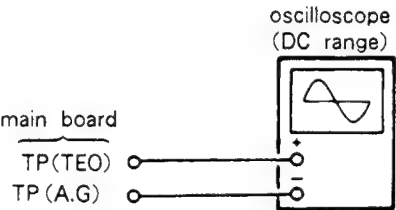
Adjustment Location : main board



E-F Balance Adjustment

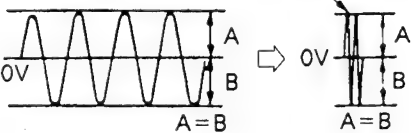
This adjustment should be made when replacing Optical Pick-up Block.

Procedure :



1. Connect test points TP (ADJ) and TP (TES) to ground with jumper wires.
2. Connect oscilloscope to test points TP (TEO) and TP (A. G).
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and playback the 6th selection.
5. Adjust RV101 so that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V.

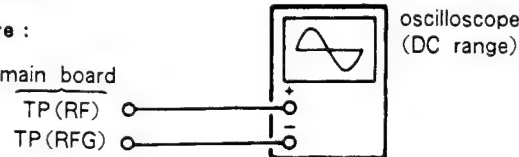
Note : Take sweep time as long as possible to obtain best waveform.



Focus Bias Adjustment

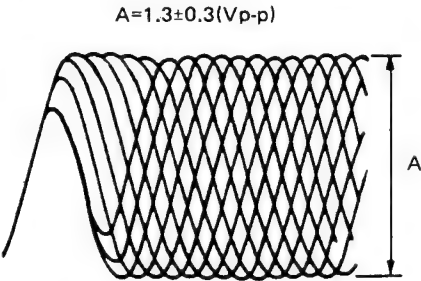
This adjustment should be made when replacing Optical Pick-up Block.

Procedure :



1. Connect oscilloscope to test points TP(RF) and TP (RF G).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and playback the 6th selection.
4. Adjust RV104 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

● RF Signal Reference Waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick - up follow - up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

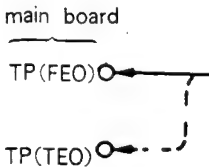
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

	Gain	Focus	Tracking
Symptoms			
● The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏏ ⏏ buttons pressed. (Normally takes about 2 seconds.)		low	low or high
● Music does not start and disc continues to rotate for STOP →▷PLAY or auto - matic selection (⏏ ⏏ buttons pressed.)		-	low
● Sound is interrupted during PLAY. Or time counter display stops progressing.		-	low
● More poise during 2-axis device oper - ation.	high	high	high

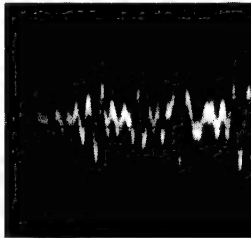
The following is a  
-Simple Adjustment-

Note : Since exact a  
remember the  
performing the  
simple adjustme  
the controls to

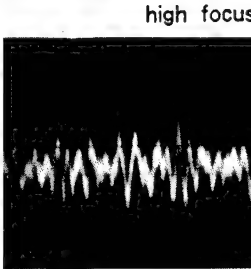
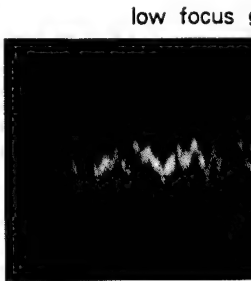
Procedure :



1. Keep the set horiz  
(If the set is not h  
performed due to t
2. Insert disc (YEDS-
3. Connect oscilloscop
4. Adjust RV102 so  
the figure below.



● Inccornt Example  
adjusted waveform

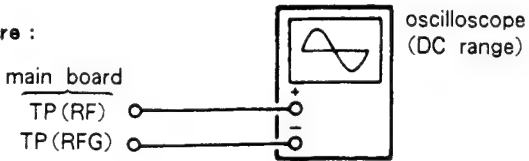


REFERENCE

Focus Bias Adjustment

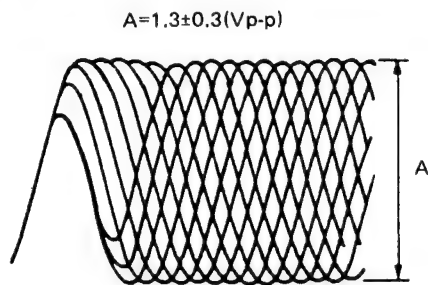
This adjustment should be made when replacing Optical Pick-up Block.

Procedure :



1. Connect oscilloscope to test points TP(RF) and TP (RF G).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and playback the 6th selection.
4. Adjust RV104 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

● RF Signal Reference Waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick - up follow - up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

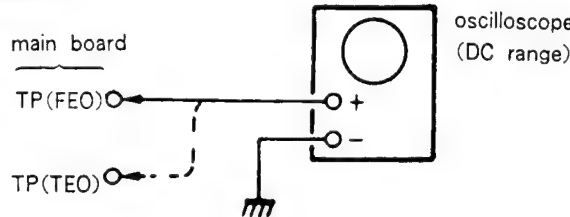
	Gain	Focus	Tracking
Symptoms			
● The time until music starts becomes longer for STOP →▶PLAY or automatic selection (M M buttons pressed. (Normally takes about 2 seconds.)		low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or auto - matic selection (M M buttons pressed.)		-	low
● Sound is interrupted during PLAY. Or time counter display stops progressing.		-	low
● More poise during 2-axis device operation.		high	high

The following is a simple adjustment method.

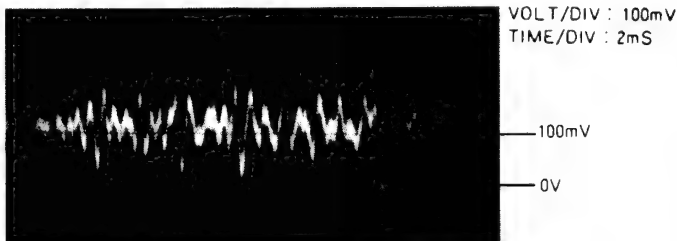
-Simple Adjustment-

**Note :** Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

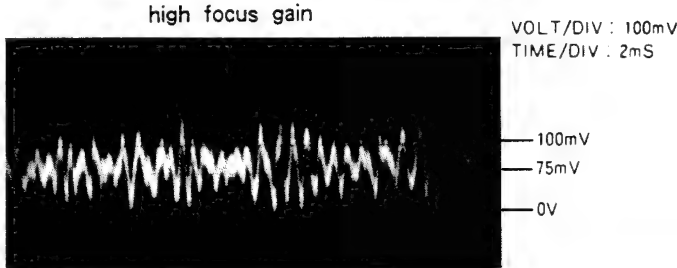
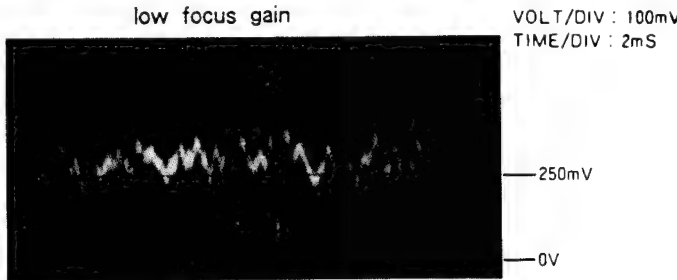
Procedure :



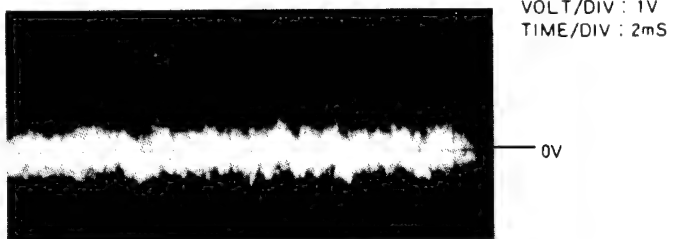
1. Keep the set horizontal.  
(If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18) playback the 6th selection.
3. Connect oscilloscope to main board TP(FEO).
4. Adjust RV102 so that the waveform is as shown in the figure below. (focus gain adjustment)



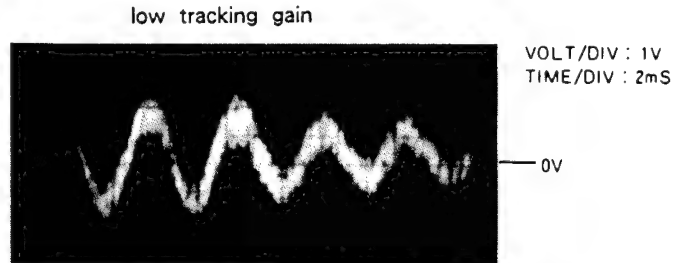
● Inccorent Examples (DC level changes more than on adjusted waveform)



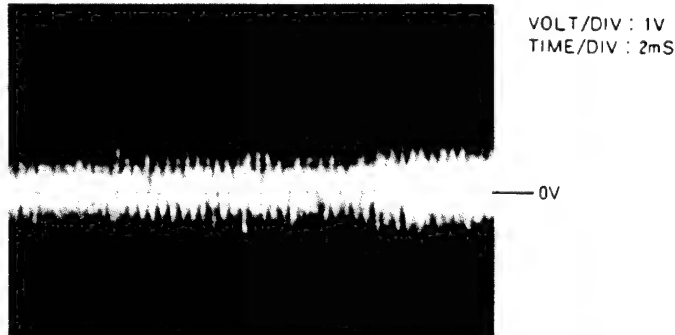
5. Connect oscilloscope to main board TP(TEO).
6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)



● Inccorent Examples (fundamental wave appears)

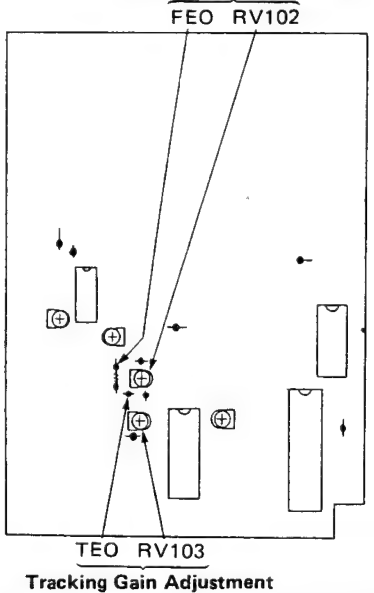


high tracking gain  
(higher fundamental wave than for low gain)



Adjustment Location : main board

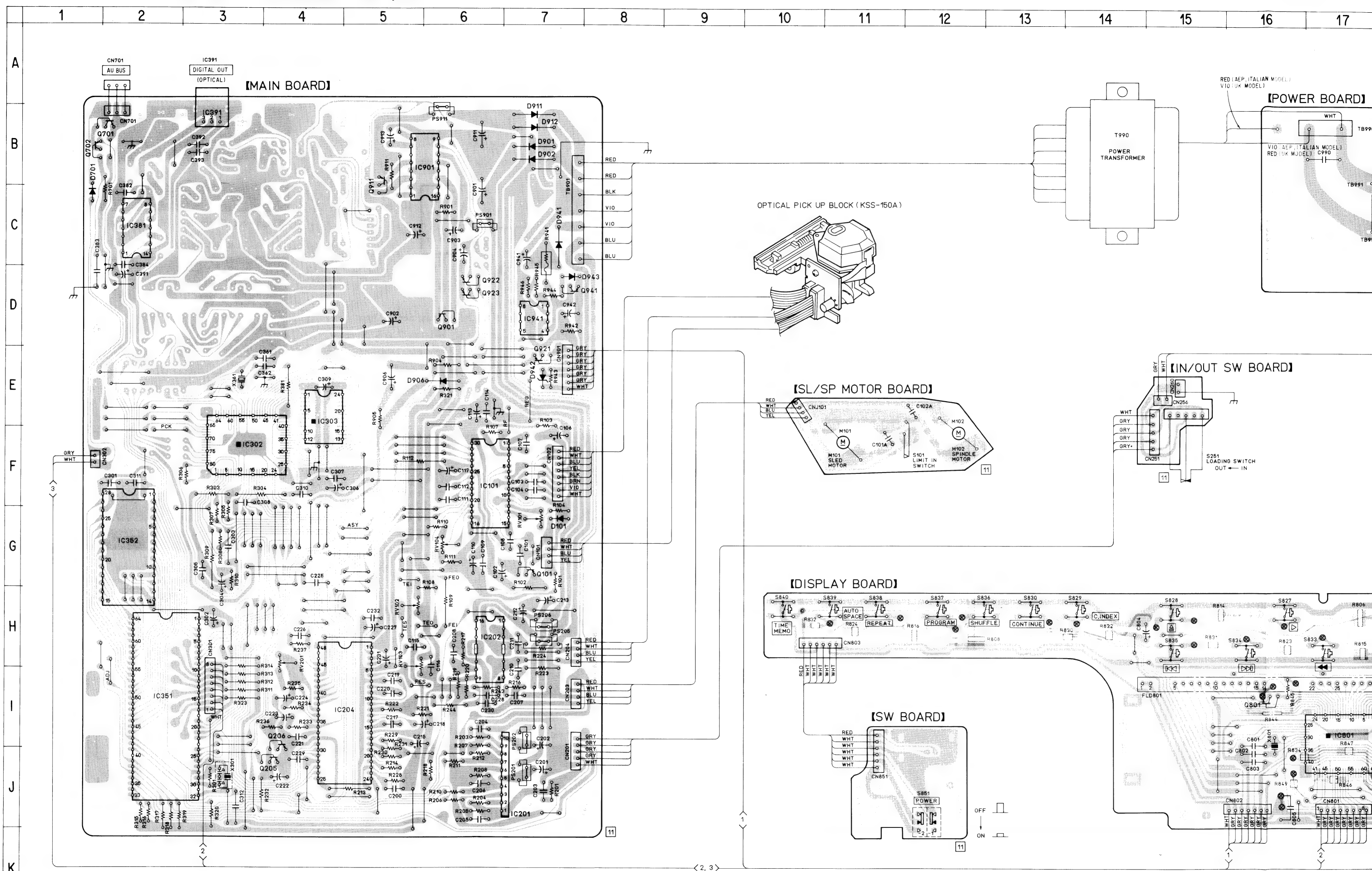
Focus Gain Adjustment

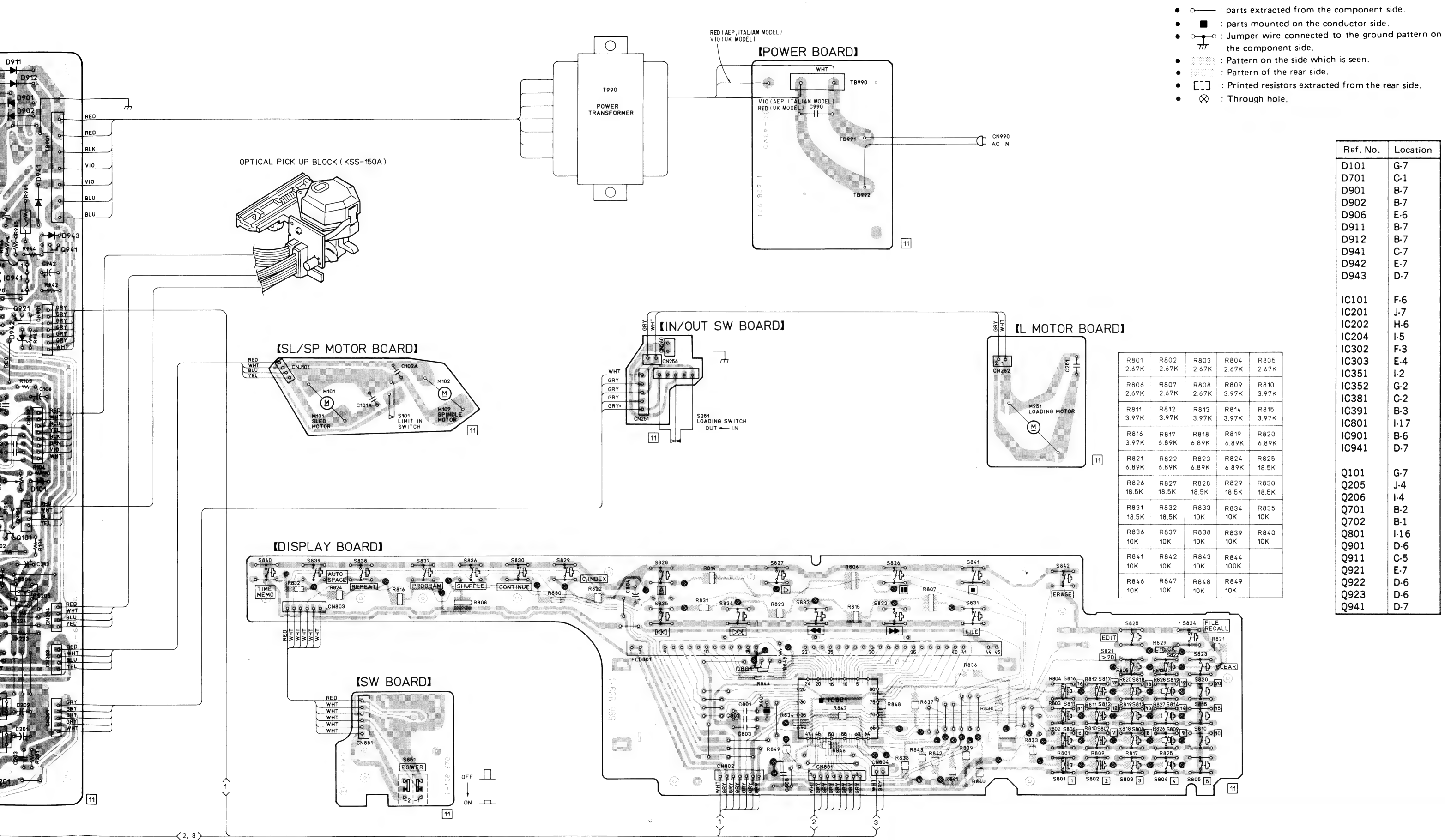





# SECTION 4 DIAGRAMS



4-1. PRINTED WIRING BOARDS • See page 15 for Semiconductor Lead Layouts.










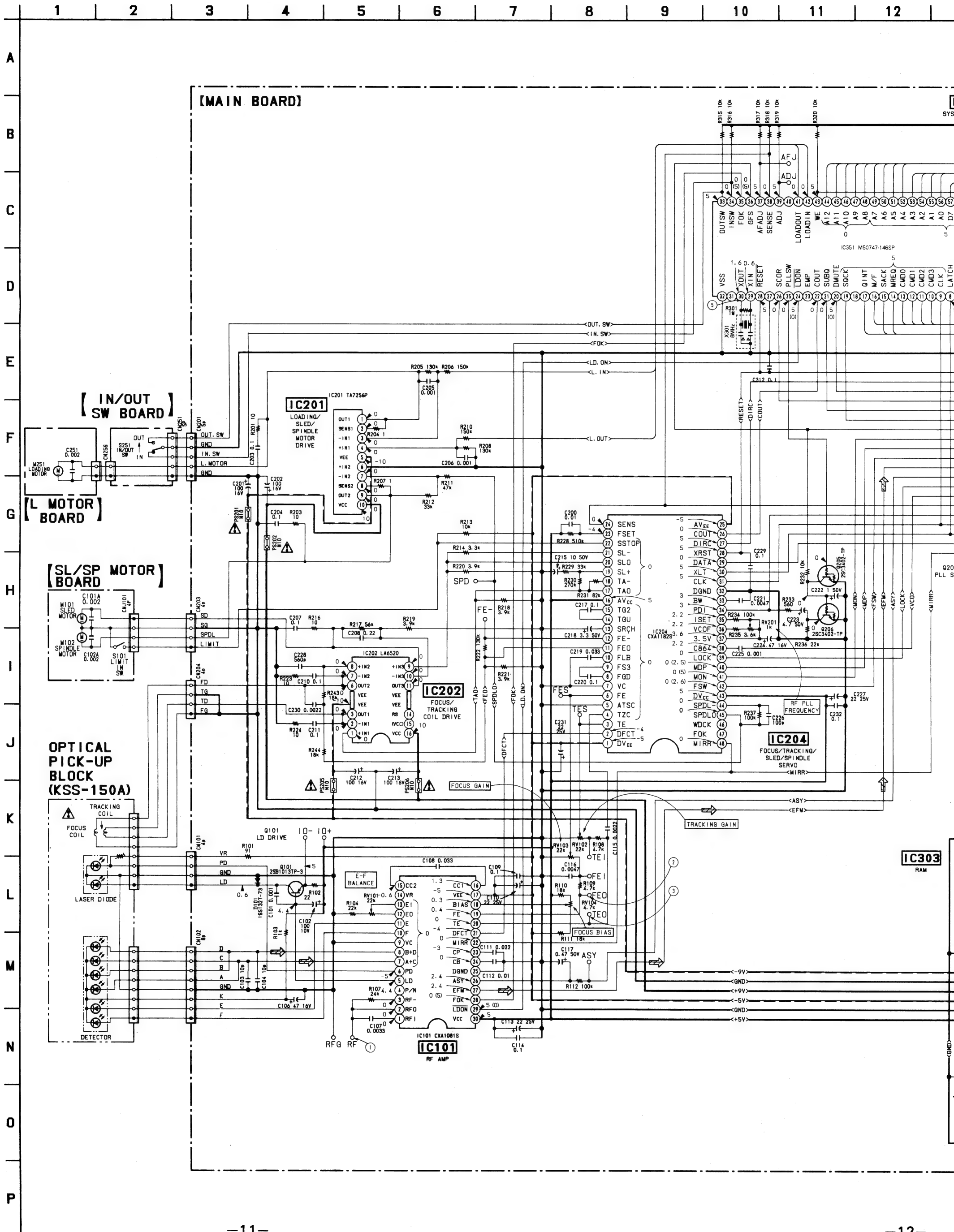
- See page 15–17 for IC Block Diagrams.

- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - Resistors specified  $\frac{1}{32}\text{W}$ ,  $\frac{1}{64}\text{W}$  are printed resistors.
  - $\triangle$  : internal component.
  -  : fusible resistor.

**Note:** The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

-  : B+ Line
-  : B- Line
-  : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.  
no mark: STOP  
(  ): PLAY
- Voltages are taken with a VOM (50 k $\Omega$ /V).  
Voltage variations may be noted due to normal production tolerances.

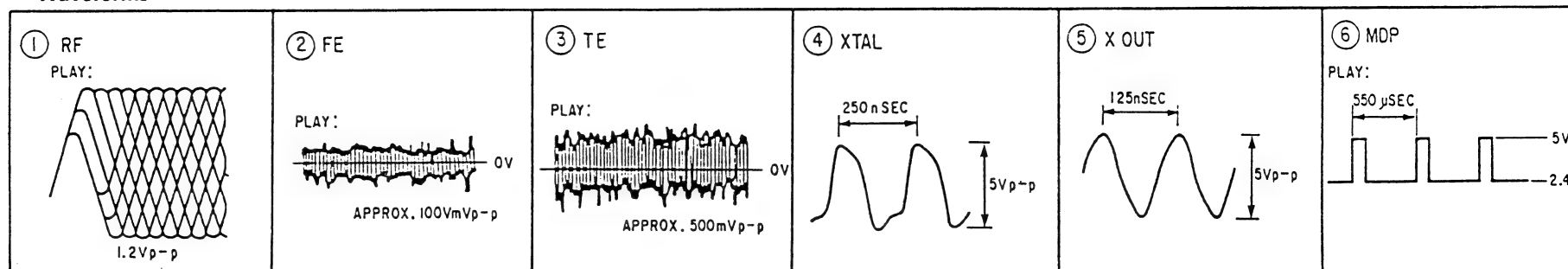
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to component tolerances.
- Circled numbers refer to waveforms.
- Signal path.  
 : CD



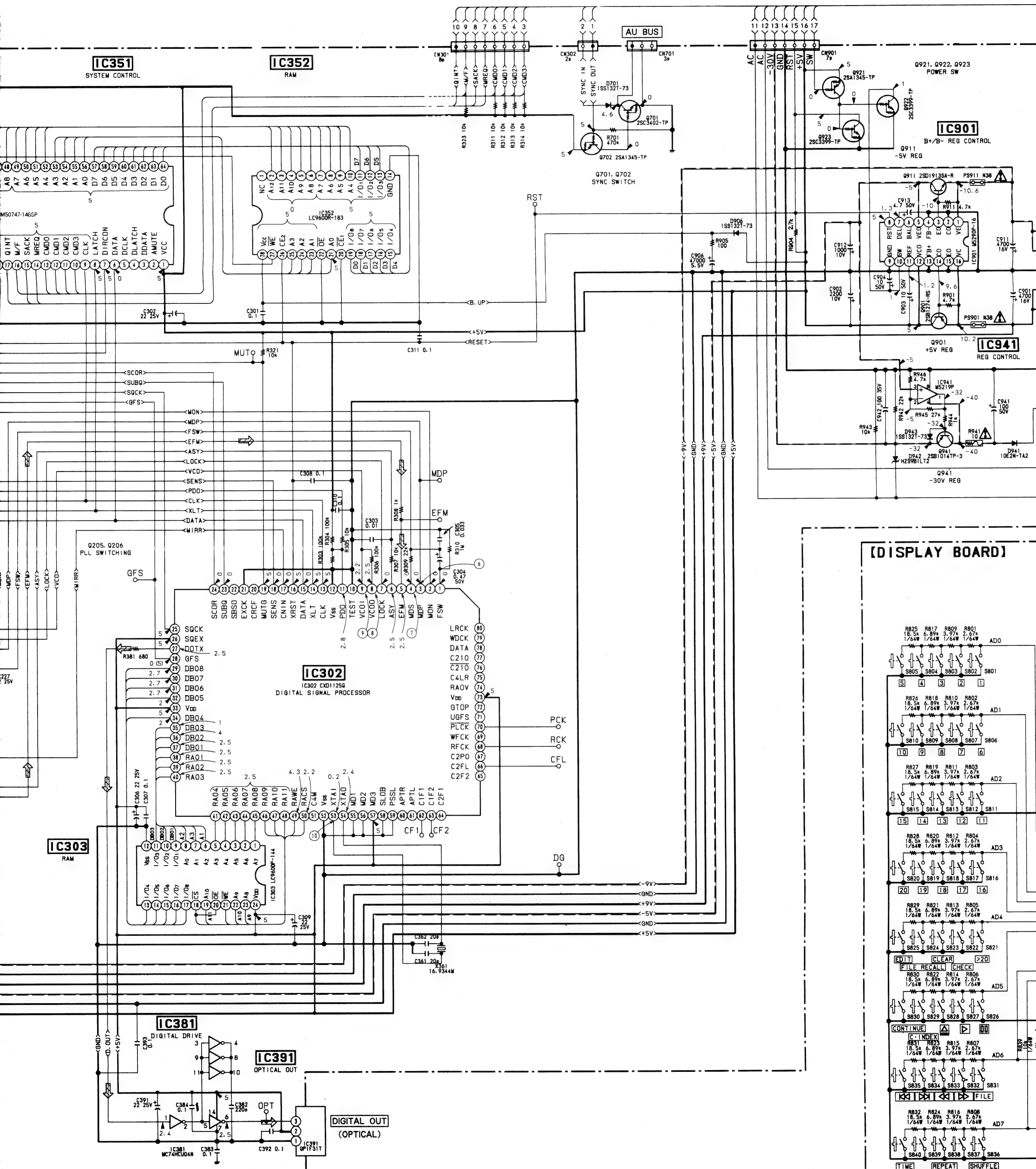


with an oscilloscope.  
may be noted due to normal produc-  
r to waveforms.

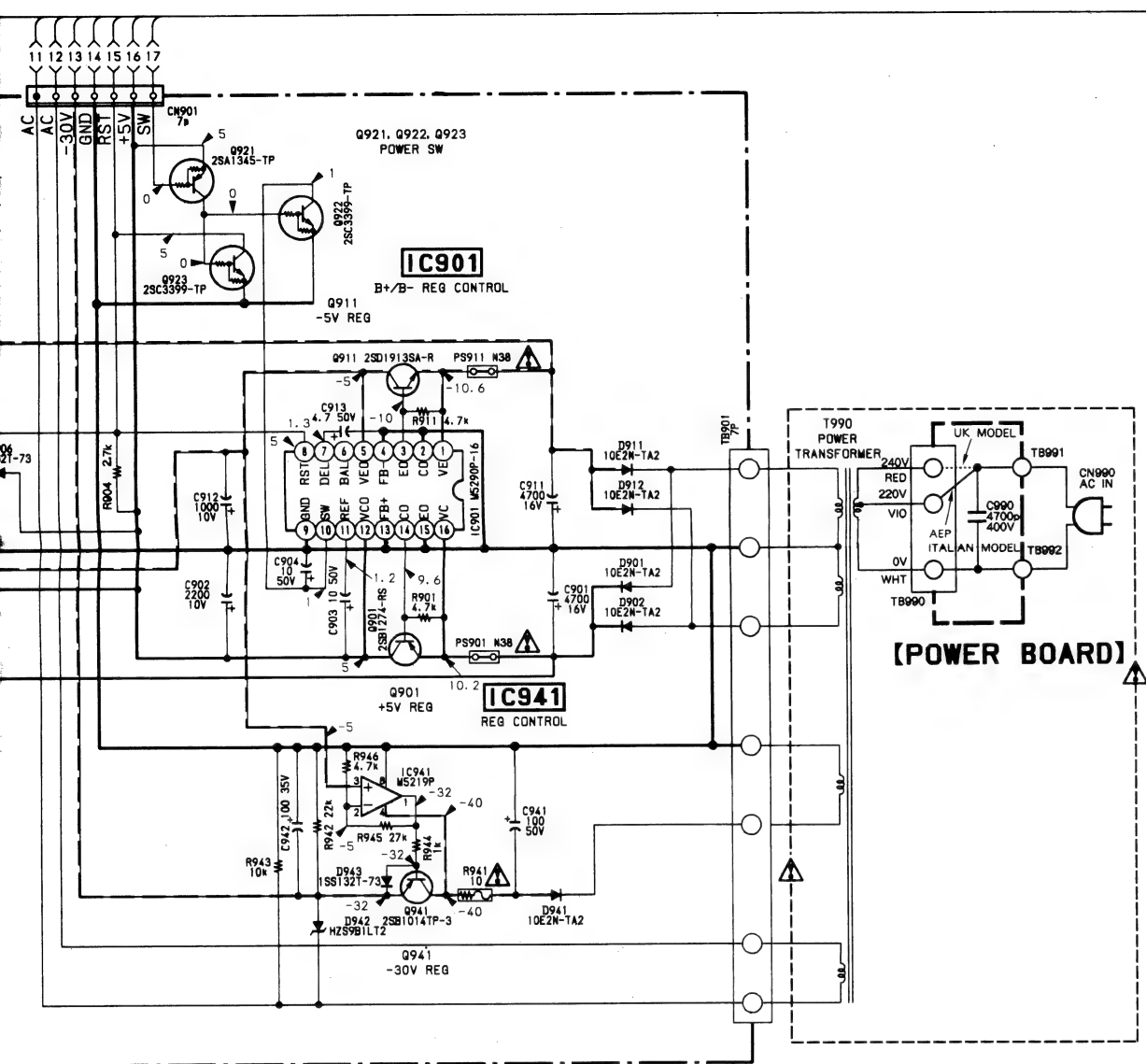
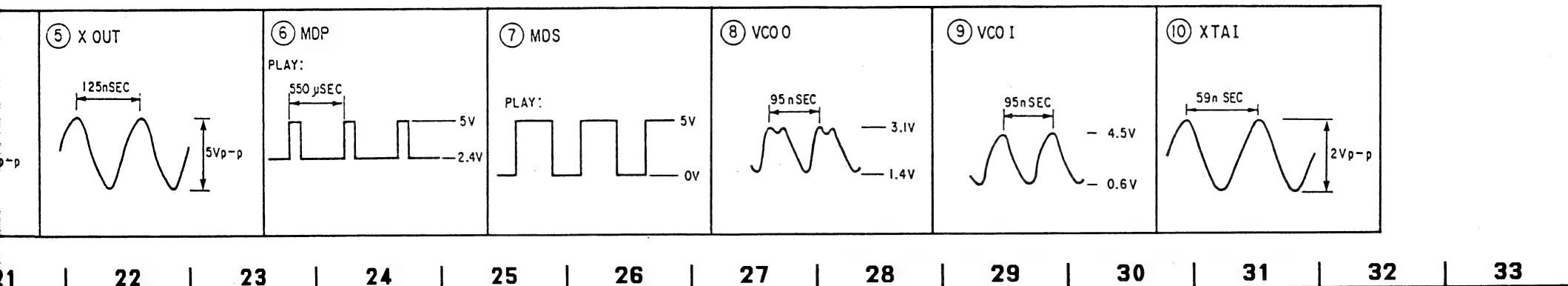
# • Waveforms



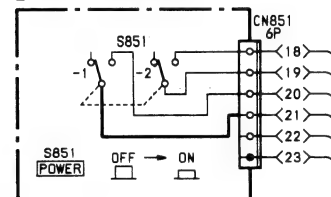
12 13 14 15 16 17 18 19 20 21 22 23 24



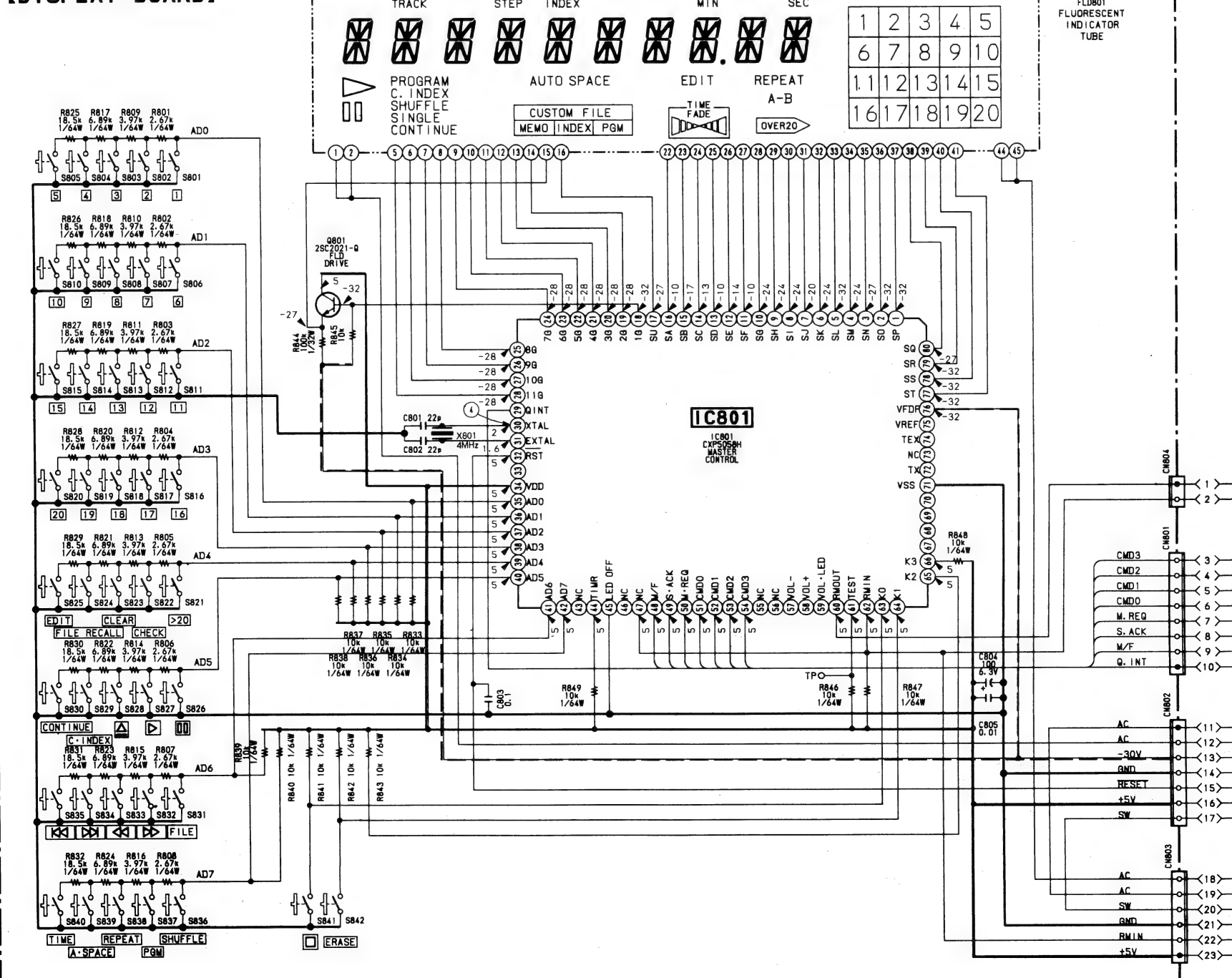


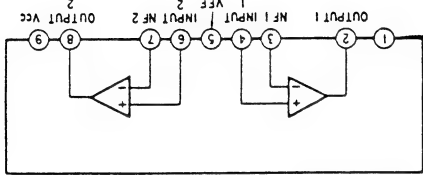


# [SW BOARD]

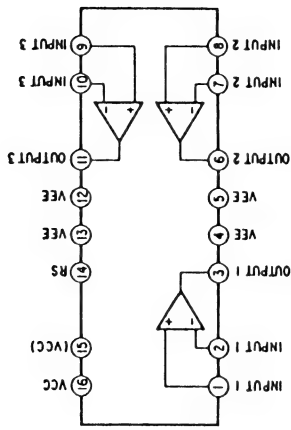


# [DISPLAY BOARD]

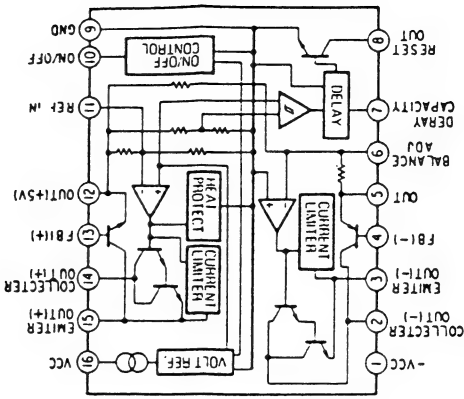




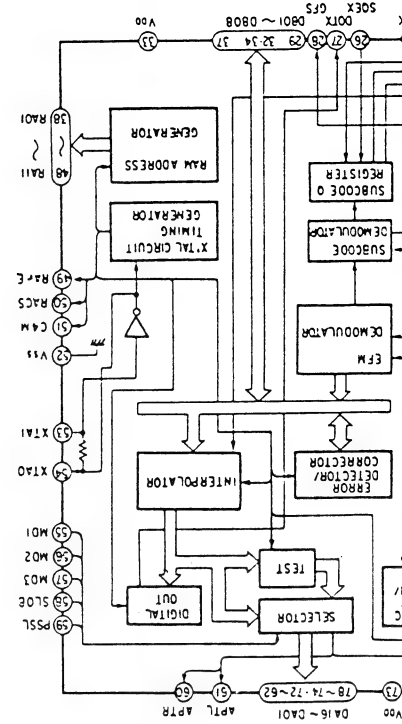
TA7256P



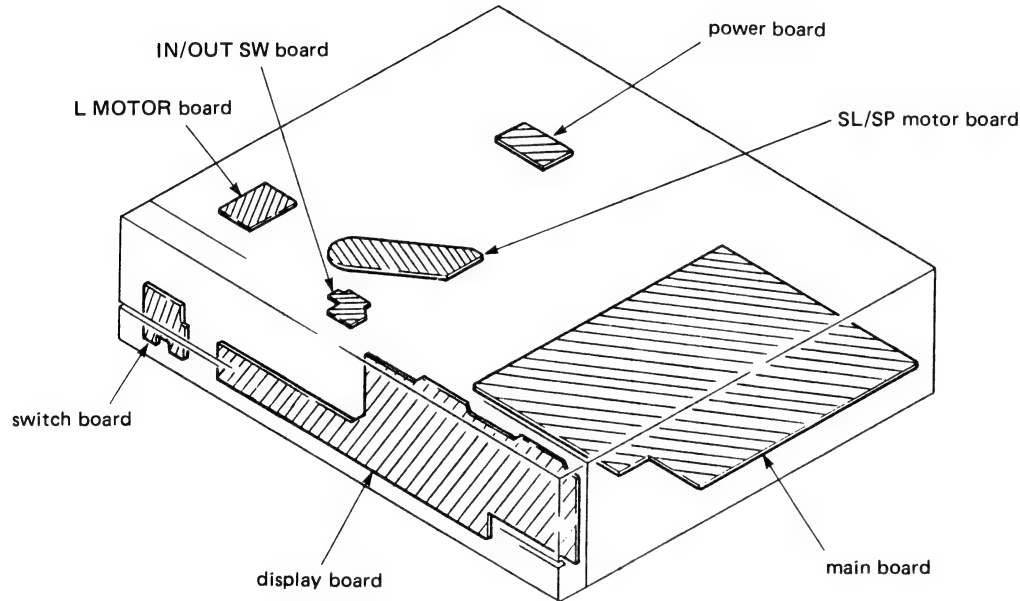
LA6520



MS290P-16

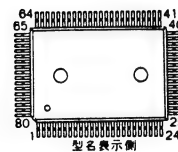


#### 4.3. CIRCUIT BOARDS LOCATION



#### ● Semiconductor Lead Layouts

CXD1125Q  
CXP5058H-192Q



DTA114ES  
DTC144ES



2SB1274  
2SD1913SA



HZS9B-2L  
1SS202-1



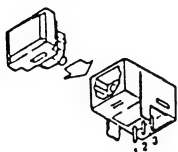
2SC2021



10E2N



GP1F31T



2SB1014



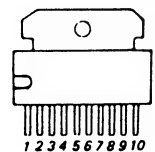
2SB1068K



2SD1685



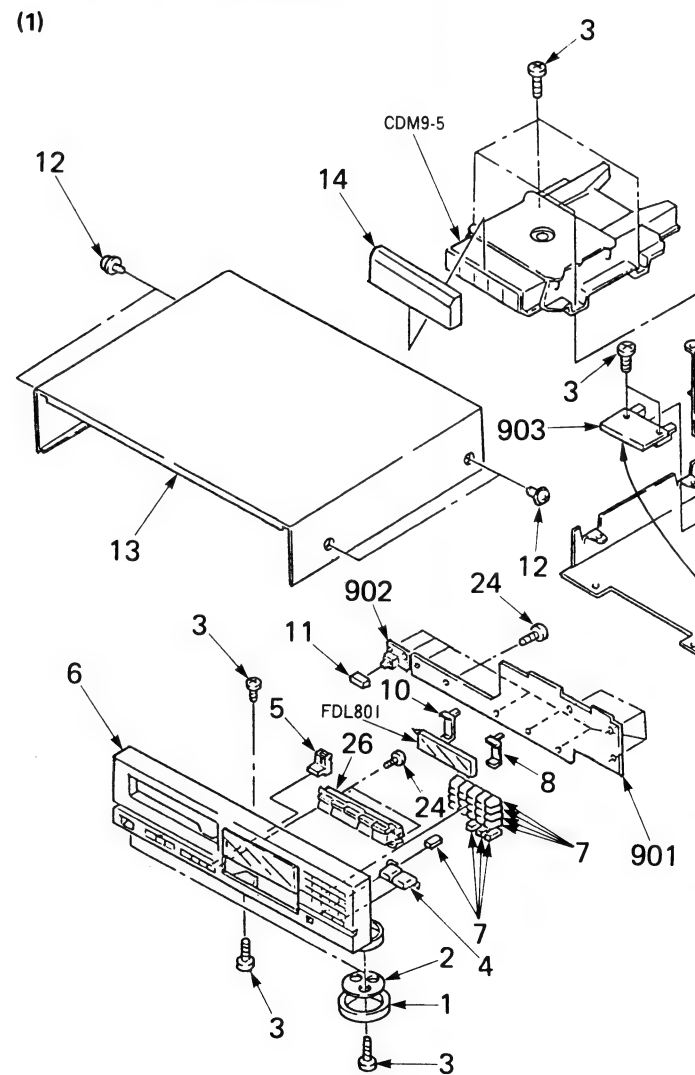
TA7256P



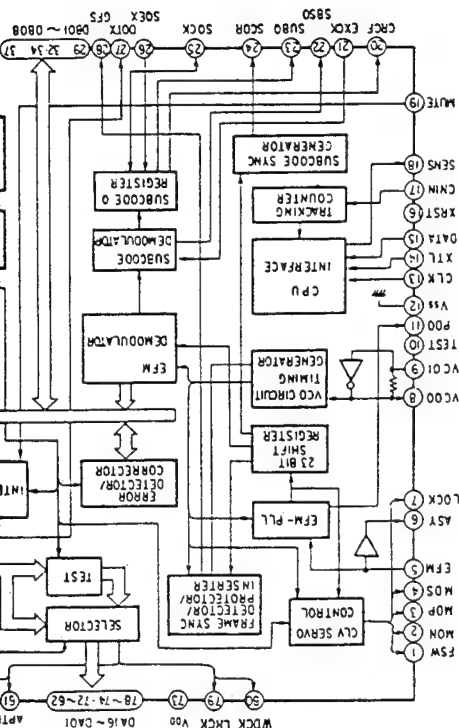
#### SEC EXPLOD

##### NOTE:

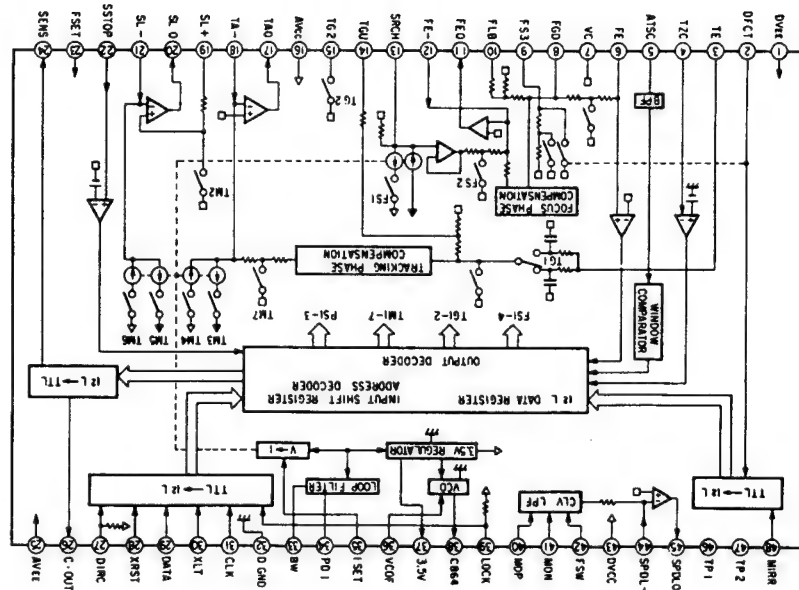
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standard number suffix different from the components used.
- Color Indication Example: (RED) ... KN Cabinet's Color



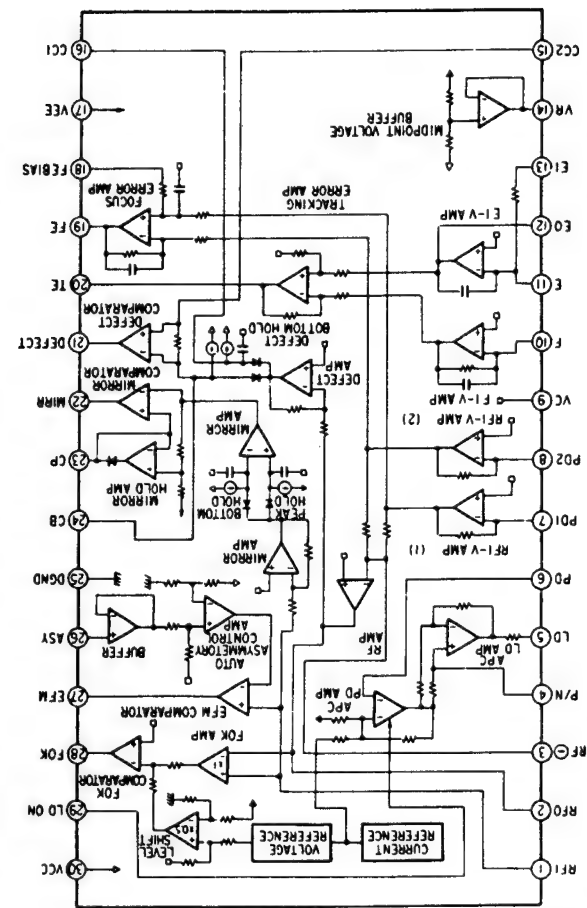
Ref.No	Part No.	Description	Remark
1	X-4917-252-1	PLATE (LEG) ASSY, ORNAMENTAL	
2	4-928-401-01	FELT	
3	7-682-547-04	SCREW +BVTT 3X6 (S)	
4	4-922-991-11	BUTTON (FD)	
5	4-922-676-01	BUTTON (ID)	
6	X-4917-574-1	PANEL ASSY, FRONT	
7	4-922-678-11	BUTTON (MC)	
8	★4-922-523-01	HOLDER (RIGHT)	
9	7-682-548-04	SCREW +BVTT 3X8 (S)	
10	★4-922-524-01	HOLDER (LEFT)	
11	4-922-903-01	BUTTON (PW)	
12	3-704-366-01	SCREW (CASE) (M3X8)	
13	4-919-376-31	CASE	
14	4-922-990-01	PANEL (LOADING)	
15	★4-922-525-01	HEAT SINK	
16	★4-854-790-00	HEAT SINK	
17	7-682-547-09	SCREW B 3X6	
18	★3-703-244-00	BUSHING (2104), CORD	
19	★4-922-911-01	CHASSIS (R)	
20	★4-922-632-01	SHEET, INSULATING	



CXD11250



CXA1182S





CXA1081S

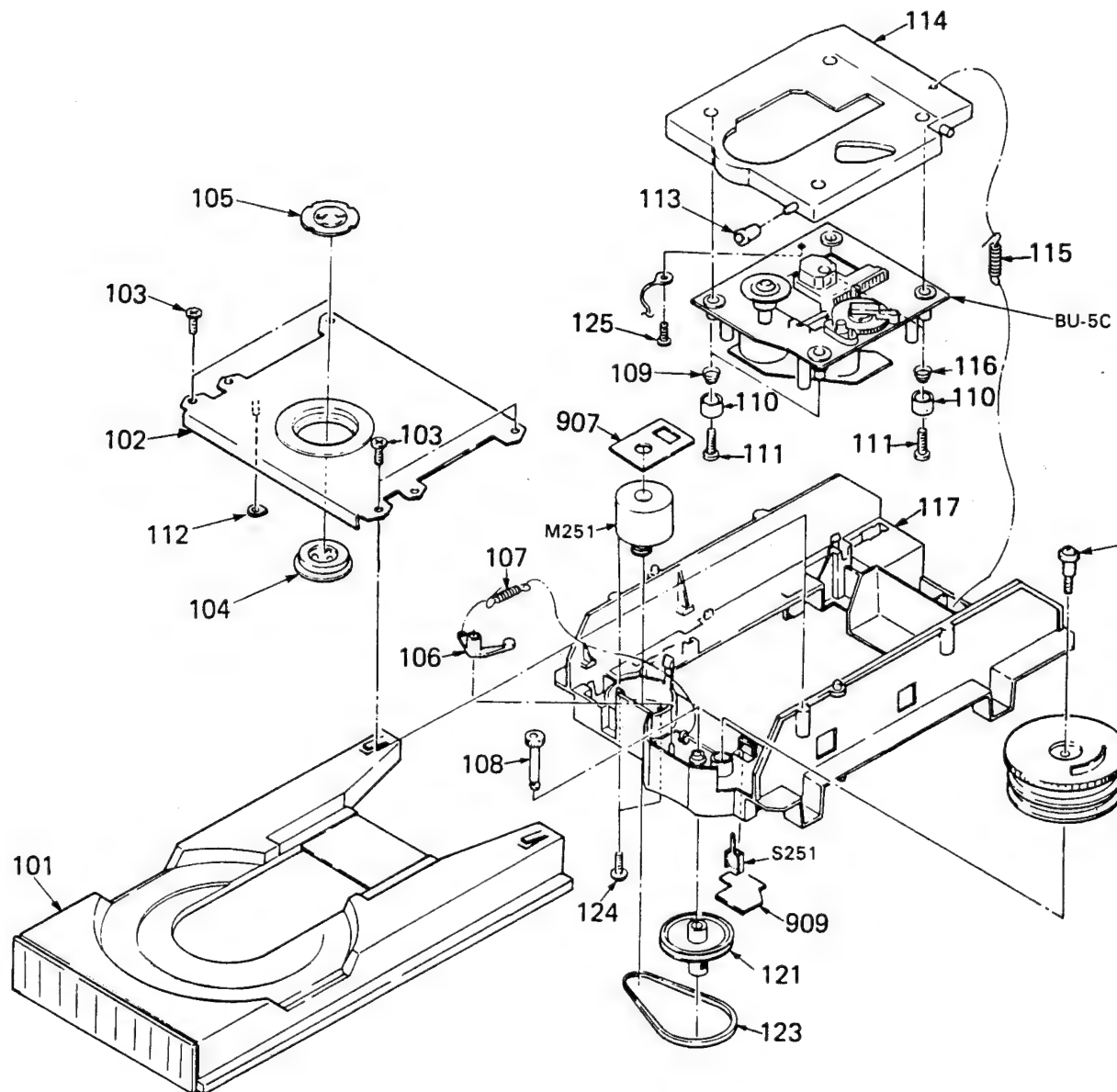
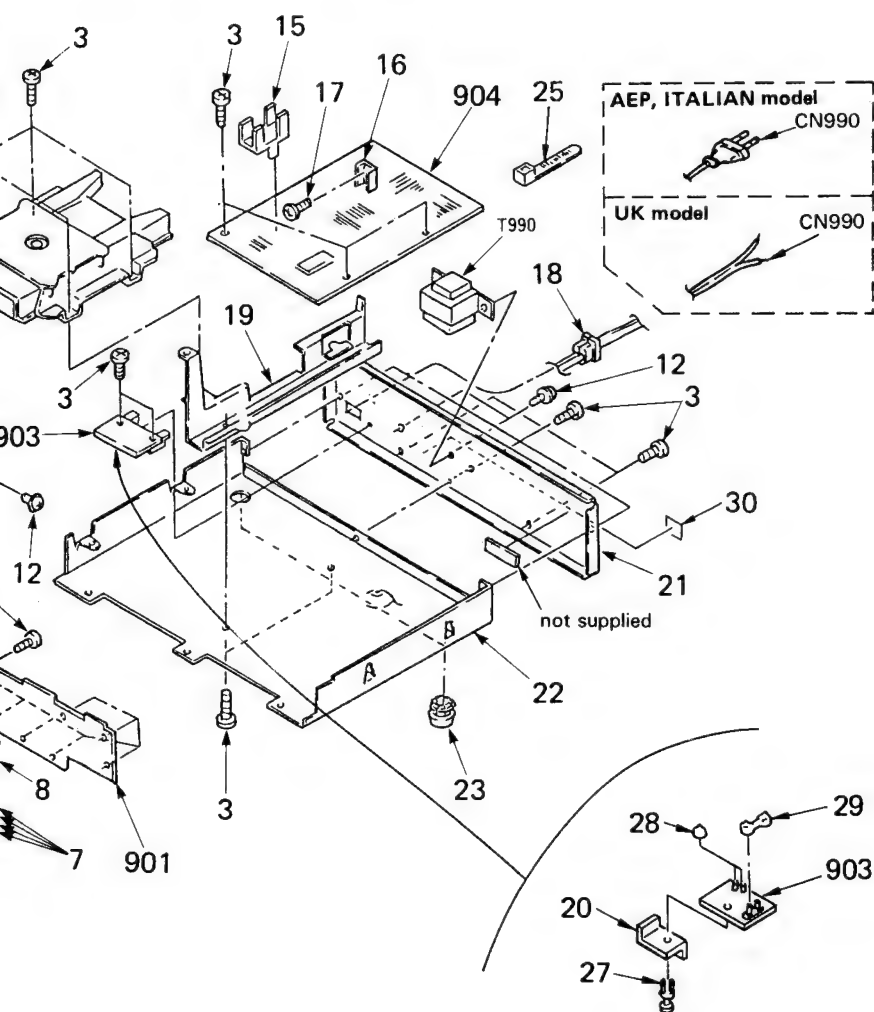
Diagrams

## SECTION 5 EXPLODED VIEWS

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

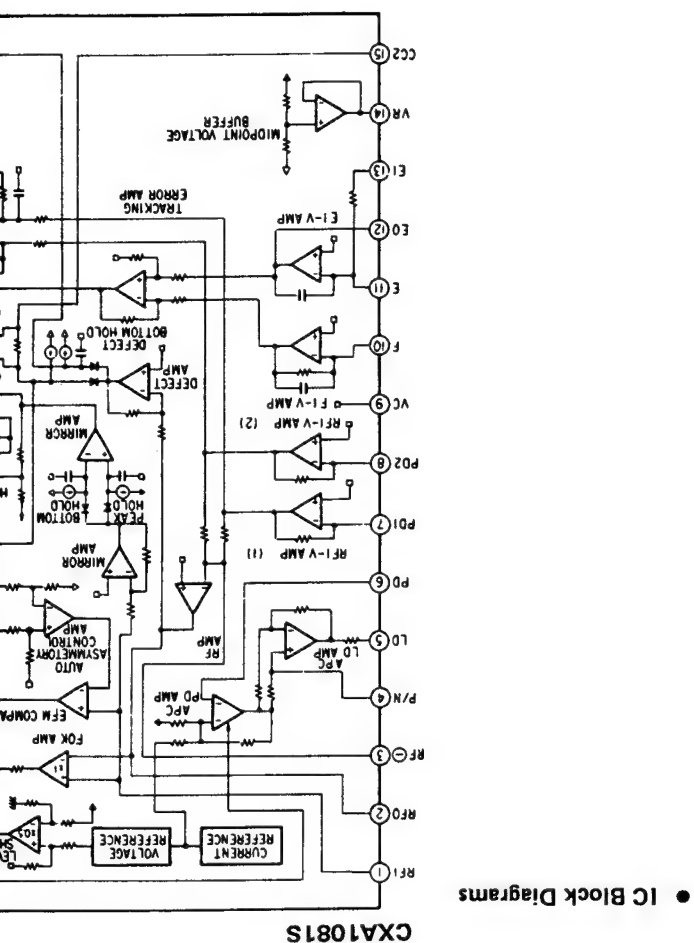
### (2) MD Section (CDM9-5)



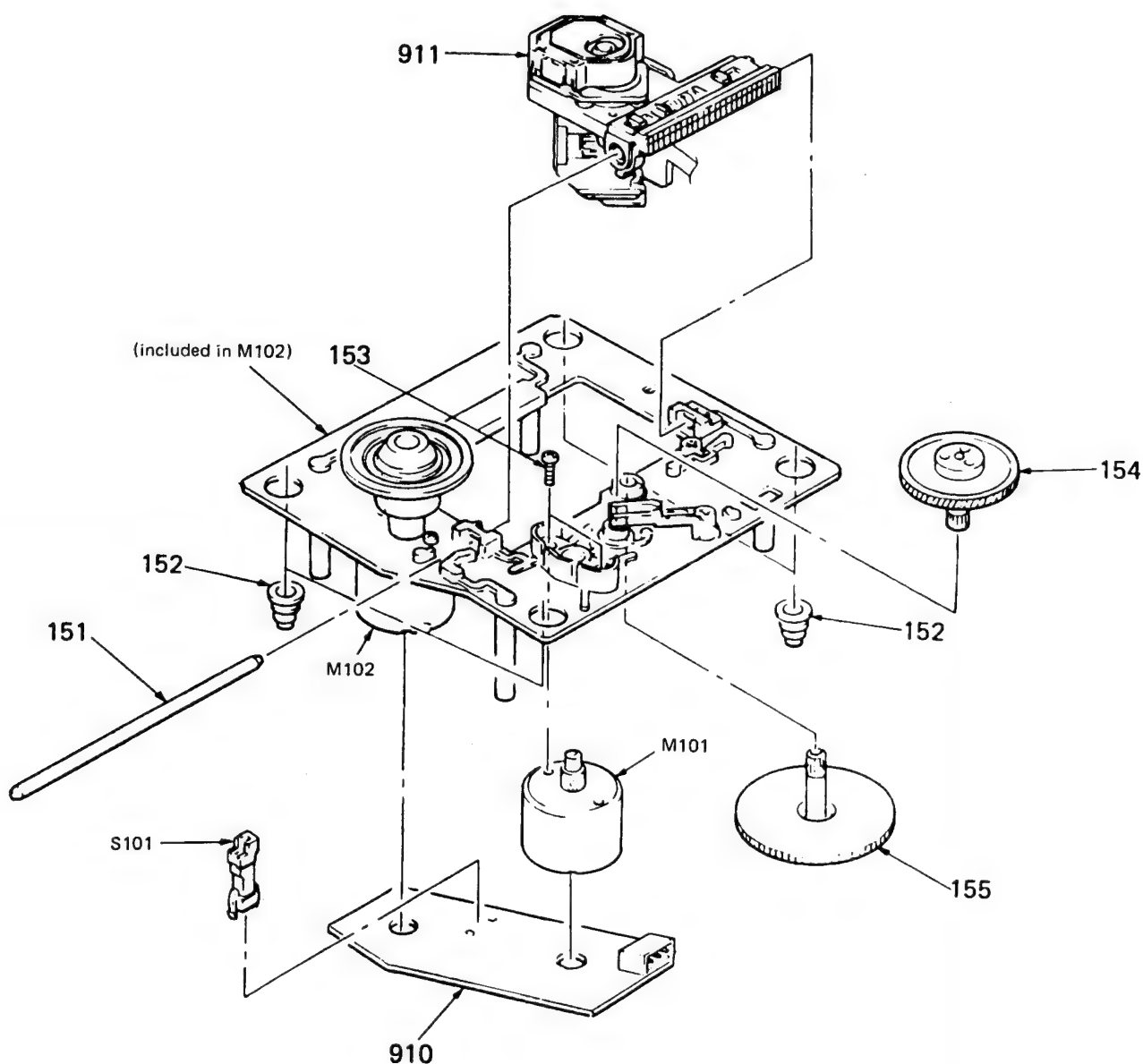
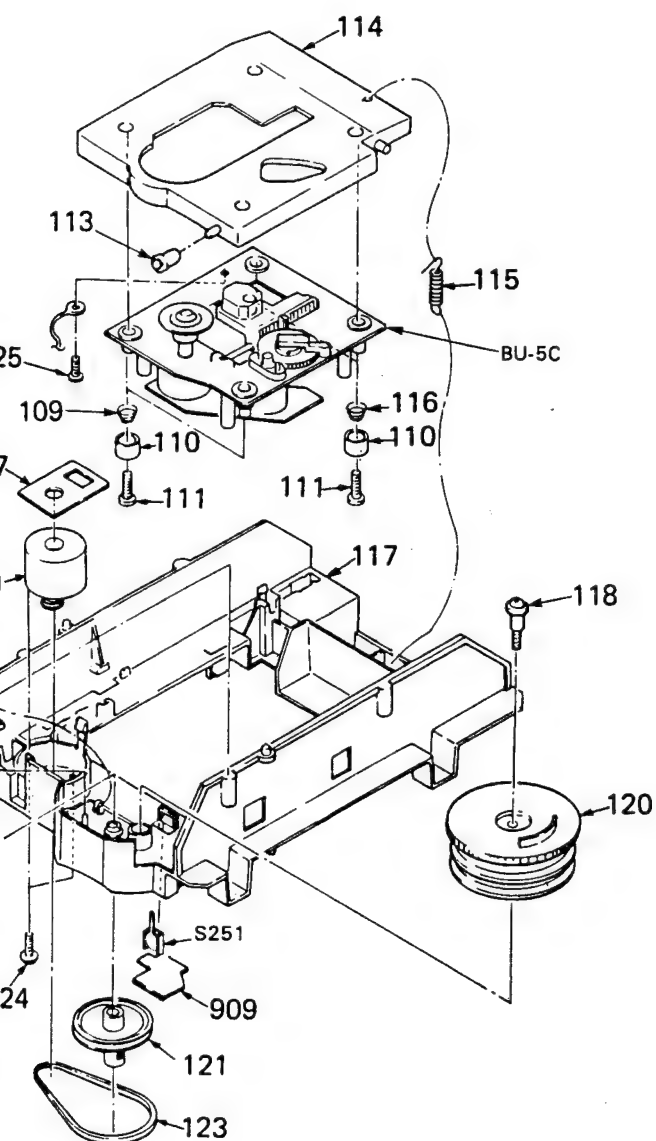
Remark	Ref.No	Part No.	Description	Remark
	21	*4-922-670-71	(AEP, Italian)...PANEL, BACK	
		*4-922-670-81	(UK)...PANEL, BACK	
	22	*4-921-903-51	CHASSIS	
	23	4-931-169-01	FOOT	
	24	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
	25	3-655-653-21	BAND (TAITON), BINDING	
	26	X-4917-556-1	BUTTON (P) ASSY	
	27	3-531-576-11	RIVET	
	28	*4-912-962-01	COVER (1P), TERMINAL	
	29	*4-912-963-01	COVER (2P), TERMINAL	
	30	*4-885-838-00	LABEL, CLASS 1	
	901	*1-628-969-11	PC BOARD, DISPLAY (PRC)	
	902	*1-628-970-11	PC BOARD, SWITCH (PRC)	
	903	*1-628-971-11	PC BOARD, POWER (PRC)	
	904	A-4651-227-A	MOUNTED PCB, MAIN	
		CN990	*1-555-795-00 (AEP, Italian)...CORD, POWER, EULO PLUG	
			*1-556-562-11 (UK)...CORD, POWER	
		FLD801	1-519-481-11 INDICATOR TUBE, FLUORESCENT	
		T990	*1-449-558-11 TRANSFORMER, POWER	

No.	Part No.	Description
101	*4-922-515-01	TABLE, DISK
102	*4-922-510-01	REINFORCEMENT (MG)
103	7-685-546-11	SCREW +BTP 3X8 TYPE2 N-S
104	A-4665-024-A	MAGNET ASSY
105	*4-918-679-04	PULLEY, PRESS
106	4-917-519-01	LEVER, SET
107	4-917-514-01	SPRING, TENSION
108	4-922-508-01	GEAR (DRIVING)
109	4-917-541-01	SPRING (B)
110	4-917-508-01	HOLDER, SP
111	7-685-535-11	SCREW +BTP 2.6X10 TYPE2 N-S
112	*4-922-529-01	DAMPER
113	4-917-515-01	ROLLER
114	*4-922-514-01	BRACKET (BU-5)

Remarks	No.	Part No.	Description
	115	4-917-526-01	SPRING, TENSION
	116	4-917-507-01	SPRING (H)
	117	*4-922-516-01	CHASSIS (MD)
	118	7-685-152-19	SCREW, STEP
	120	4-922-511-01	GEAR (LOADING)
	121	4-922-512-01	PULLEY
	123	4-917-522-02	BELT
	124	7-621-775-20	SCREW +B 2.6X5
	125	7-621-770-67	SCREW +BVT 2.6X6 (S)
	907	*1-626-838-11	PC BOARD, L.MOTOR
	909	*1-626-837-11	PC BOARD, IN/OUT SW
	M251	A-4608-346-A	MOTOR ASSY, L
	S251	1-571-300-11	SWITCH, ROTARY





### (3) OPTICAL PICK-UP BLOCK (BU-5C)



No.	Part No.	Description	Remarks
115	4-917-526-01	SPRING, TENSION	
116	4-917-507-01	SPRING (H)	
117	*4-922-516-01	CHASSIS (MD)	
118	7-685-152-19	SCREW, STEP	
120	4-922-511-01	GEAR (LOADING)	
121	4-922-512-01	PULLEY	
123	4-917-522-02	BELT	
124	7-621-775-20	SCREW +B 2.6X5	
125	7-621-770-67	SCREW +BVT 2.6X6 (S)	
907	*1-626-838-11	PC BOARD, L.MOTOR	
909	*1-626-837-11	PC BOARD, IN/OUT SW	
M251	A-4608-346-A	MOTOR ASSY, L	
S251	1-571-300-11	SWITCH, ROTARY	

No.	Part No.	Description	Remarks
151	4-917-565-01	SHAFT, SLED	
152	4-917-562-01	INSULATOR	
153	7-621-255-15	SCREW +P 2X3	
154	4-917-567-01	GEAR (M)	
155	4-917-564-01	GEAR (P), FLATNESS	

No.	Part No.	Description	Remarks
910	*1-626-304-11	PC BOARD, SL/SP MOTOR	
911	△ 8-848-062-01	DEVICE, OPTICS (KSS-150A)	
M101	X-4917-504-1	ASSY, MOTOR (SLED)	
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
S101	1-571-274-11	SWITCH, LEAF (LIMIT IN)	

**Note:** The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



## SECTION 6

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**In each case, U:  $\mu$ , for example:UA....:  $\mu$ A...., UPA....:  $\mu$ PA....,UPC....:  $\mu$ PC, UPD....:  $\mu$ PD....

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Ref.No	Part No.	Description
901	*1-628-969-11	PC BOARD, DISPLAY (PRC)	C230	1-161-375-00	CERAMIC
902	*1-628-970-11	PC BOARD, SWITCH (PRC)	C231	1-126-233-11	ELECT
903	*1-628-971-11	PC BOARD, POWER (PRC)	C232	1-164-159-11	CERAMIC
904	A-4651-227-A	MOUNTED PCB, MAIN	C251	1-136-157-00	FILM
907	*1-626-838-11	PC BOARD, L. MOTOR	C301	1-164-159-11	CERAMIC
909	*1-626-837-11	PC BOARD, IN/OUT SW	C302	1-126-233-11	ELECT
910	*1-626-304-11	PC BOARD, SL/SP MOTOR	C303	1-161-379-00	CERAMIC
911	$\Delta$ 8-848-062-01	DEVICE, OPTICAL KSS-150A(H)	C304	1-124-902-00	ELECT
<b>CAPACITOR</b>					
C101	1-162-294-31	CERAMIC	C305	1-136-159-00	FILM
C101A	1-106-796-11	MYLAR	C306	1-126-233-11	ELECT
C102	1-124-443-00	ELECT	C307	1-164-159-11	CERAMIC
C102A	1-106-796-11	MYLAR	C308	1-164-159-11	CERAMIC
C103	1-162-199-31	CERAMIC	C309	1-126-233-11	ELECT
C104	1-162-199-31	CERAMIC	C310	1-164-159-11	CERAMIC
C106	1-124-477-11	ELECT	C311	1-164-159-11	CERAMIC
C107	1-130-477-00	MYLAR	C312	1-164-159-11	CERAMIC
C108	1-136-159-00	FILM	C361	1-162-206-31	CERAMIC
C109	1-164-159-11	CERAMIC	C362	1-162-206-31	CERAMIC
C110	1-126-233-11	ELECT	C382	1-162-286-31	CERAMIC
C111	1-136-157-00	FILM	C383	1-164-159-11	CERAMIC
C112	1-136-153-00	FILM	C384	1-164-159-11	CERAMIC
C113	1-126-233-11	ELECT	C391	1-126-233-11	ELECT
C114	1-164-159-11	CERAMIC	C392	1-164-159-11	CERAMIC
C115	1-161-375-00	CERAMIC	C393	1-164-159-11	CERAMIC
C116	1-161-377-00	CERAMIC	C801	1-162-207-31	CERAMIC
C117	1-124-902-00	ELECT	C802	1-162-207-31	CERAMIC
C200	1-161-379-00	CERAMIC	C803	1-164-159-11	CERAMIC
C201	1-126-101-11	ELECT	C804	1-126-177-11	ELECT
C202	1-126-101-11	ELECT	C805	1-161-379-00	CERAMIC
C203	1-164-159-11	CERAMIC	C901	1-124-898-11	ELECT
C204	1-164-159-11	CERAMIC	C902	1-124-893-11	ELECT
C205	1-162-294-31	CERAMIC	C903	1-123-875-11	ELECT
C206	1-162-294-31	CERAMIC	C904	1-123-875-11	ELECT
C207	1-164-159-11	CERAMIC	C906	1-126-244-51	ELECT
C208	1-136-169-00	FILM	C911	1-124-898-11	ELECT
C210	1-164-159-11	CERAMIC	C912	1-124-473-11	ELECT
C211	1-164-159-11	CERAMIC	C913	1-124-927-11	ELECT
C212	1-126-101-11	ELECT	C941	1-124-122-11	ELECT
C213	1-126-101-11	ELECT	C942	1-124-122-11	ELECT
C215	1-123-875-11	ELECT	C990	$\Delta$ 1-162-599-12	CERAMIC
C217	1-136-165-00	FILM	CN101	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
C218	1-123-382-00	ELECT	CN102	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
C219	1-136-159-00	FILM	CN201	*1-564-339-61	PIN, CONNECTOR 5P
C220	1-136-165-00	FILM	CN203	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
C221	1-130-479-00	MYLAR	CN204	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
C222	1-124-499-11	ELECT	CN256	*1-564-495-11	PIN, CONNECTOR 2P
C223	1-124-927-11	ELECT	CN260	*1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P
C224	1-124-477-11	ELECT	CN301	*1-564-342-11	PIN, CONNECTOR 8P
C225	1-162-294-31	CERAMIC	CN302	*1-564-336-00	PIN, CONNECTOR 2P
C226	1-162-282-31	CERAMIC	CN701	*1-565-561-11	PIN, CONNECTOR 3P (AU BUS)
C227	1-126-233-11	ELECT	CN851	*1-564-499-11	PIN, CONNECTOR 6P
C228	1-162-291-31	CERAMIC	CN901	*1-564-341-11	PIN, CONNECTOR 7P
C229	1-164-159-11	CERAMIC	CN990	$\Delta$ 1-555-795-00	(AEP, Italian)....CORD, POWER, EULO PLUG
				$\Delta$ 1-556-562-11	(UK)....CORD, POWER

Ref.No	Part No.	Description
CNJ101	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P

D101	8-719-107-94	DIODE 1SS202-1
D701	8-719-107-94	DIODE 1SS202-1
D901	8-719-200-77	DIODE 10E2N
D902	8-719-200-77	DIODE 10E2N
D906	8-719-107-94	DIODE 1SS202-1

D911	8-719-200-77	DIODE 10E2N
D912	8-719-200-77	DIODE 10E2N
D941	8-719-200-77	DIODE 10E2N
D942	8-719-933-57	DIODE HZS9B2L
D943	8-719-107-94	DIODE 1SS202-1

FLD801	1-519-481-11	INDICATOR TUBE, FLUORESCENT
--------	--------------	-----------------------------

IC101	8-752-034-00	IC CXA1081S
IC201	8-759-202-01	IC TA7256P
IC202	8-752-035-28	IC CXA-1291P
IC204	8-752-032-33	IC CXA1182S
IC302	8-752-328-62	IC CXD1125Q

IC303	8-752-323-64	IC CXK5816M-12L
IC351	8-759-631-48	IC M50747-146SP
IC352	8-759-820-64	IC LC9600R-183
IC381	8-759-202-13	IC TC74HCU04P
IC391	8-759-977-71	IC GPIF31T (DIGITAL OUT)

IC801	8-752-807-09	IC CXP5058H-192Q
IC901	8-759-630-21	IC M5290P-16
IC941	8-759-602-02	IC M5219P

M101	X-4917-504-1	MOTOR ASSY, SLED
M102	X-4917-523-1	MOTOR ASSY, SPINDLE
M251	A-4608-346-A	MOTOR ASSY, L

PS201A	1-532-605-00	LINK, IC
PS202A	1-532-605-00	LINK, IC
PS205A	1-532-605-00	LINK, IC
PS206A	1-532-605-00	LINK, IC
PS901A	1-532-675-00	LINK, IC

PS911A	1-532-675-00	LINK, IC
--------	--------------	----------

Q101	8-729-116-57	TRANSISTOR 2SB1068K
Q205	8-729-820-06	TRANSISTOR 2SD1685
Q206	8-729-820-06	TRANSISTOR 2SD1685
Q701	8-729-820-06	TRANSISTOR 2SD1685
Q702	8-729-900-61	TRANSISTOR DTA114ES

Q801	8-729-902-11	TRANSISTOR 2SC2021
Q901	8-729-820-15	TRANSISTOR 2SB1274
Q911	8-729-808-76	TRANSISTOR 2SD1913SA
Q921	8-729-900-61	TRANSISTOR DTA114ES
Q922	8-729-900-89	TRANSISTOR DTC144ES

Q923	8-729-900-89	TRANSISTOR DTC144ES
Q941	8-729-802-22	TRANSISTOR 2SB1014

## RESISTOR

R101	1-247-806-11	CARBON	91	5%	1/4W
R102	1-214-689-11	METAL	22	1%	1/4W
R103	1-249-417-11	CARBON	1K	5%	1/4W
R104	1-249-433-11	CARBON	22K	5%	1/4W
R107	1-247-864-11	CARBON	24K	5%	1/4W

R108	1-249-425-11	CARBON	4.7K	5%	1/4W
R109	1-249-425-11	CARBON	4.7K	5%	1/4W
R110	1-249-432-11	CARBON	18K	5%	1/4W
R111	1-249-432-11	CARBON	18K	5%	1/4W
R112	1-249-441-11	CARBON	100K	5%	1/4W

R201	1-249-393-11	CARBON	10	5%	1/4W
R203	1-249-393-11	CARBON	10	5%	1/4W
R204	1-249-381-11	CARBON	1	5%	1/4W
R205	1-247-882-11	CARBON	130K	5%	1/4W
R206	1-247-883-00	CARBON	150K	5%	1/4W

Ref.No	Part No.	Description
R207	1-249-381-11	CARBON
R208	1-247-882-11	CARBON
R210	1-247-883-00	CARBON
R211	1-249-437-11	CARBON
R212	1-249-435-11	CARBON
R213	1-249-429-11	CARBON
R214	1-249-423-11	CARBON
R216	1-249-393-11	CARBON
R217	1-249-438-11	CARBON
R218	1-249-424-11	CARBON
R219	1-249-424-11	CARBON
R220	1-249-424-11	CARBON
R221	1-249-424-11	CARBON
R222	1-247-882-11	CARBON
R223	1-249-393-11	CARBON
R224	1-249-393-11	CARBON
R228	1-247-896-11	CARBON
R229	1-249-435-11	CARBON
R230	1-247-889-00	CARBON
R231	1-249-440-11	CARBON
R232	1-249-429-11	CARBON
R233	1-249-414-11	CARBON
R234	1-249-441-11	CARBON
R235	1-215-434-00	METAL
R236	1-249-433-11	CARBON
R237	1-249-441-11	CARBON
R243	1-249-432-11	CARBON
R244	1-249-432-11	CARBON
R301	1-247-903-00	CARBON
R303	1-215-469-00	METAL
R304	1-215-469-00	METAL
R305	1-249-429-11	CARBON
R306	1-249-441-11	CARBON
R307	1-249-429-11	CARBON
R308	1-249-417-11	CARBON
R309	1-249-433-11	CARBON
R310	1-247-903-00	CARBON
R311	1-249-429-11	CARBON
R312	1-249-429-11	CARBON
R313	1-249-429-11	CARBON
R314	1-249-429-11	CARBON
R315	1-249-429-11	CARBON
R316	1-249-429-11	CARBON
R317	1-249-429-11	CARBON
R318	1-249-429-11	CARBON
R319	1-249-429-11	CARBON
R320	1-249-429-11	CARBON
R321	1-249-429-11	CARBON
R323	1-249-429-11	CARBON
R381	1-249-415-11	CARBON
R701	1-247-895-00	CARBON
R845	1-249-429-11	CARBON
R901	1-249-425-11	CARBON
R904	1-249-422-11	CARBON
R905	1-249-405-11	CARBON
R911	1-249-425-11	CARBON
R941	1-212-857-00	FUSIBLE
R942	1-249-433-11	CARBON
R943	1-249-429-11	CARBON
R944	1-249-417-11	CARBON
R945	1-249-434-11	CARBON
R946	1-249-425-11	CARBON
RV101	1-228-995-00	RES, ADJ, CARBON 22K (E-F BALANCE)
RV102	1-228-995-00	RES, ADJ, CARBON 22K (TRACKING GAIN)
RV103	1-228-995-00	RES, ADJ, CARBON 22K (FOCUS GAIN)

1	5%	1/4W
130K	5%	1/4W
150K	5%	1/4W
47K	5%	1/4W
33K	5%	1/4W

10K	5%	1/4W
3.3K	5%	1/4W
10	5%	1/4W
56K	5%	1/4W
3.9K	5%	1/4W

3.9K	5%	1/4W
3.9K	5%	1/4W
3.9K	5%	1/4W
130K	5%	1/4W
10	5%	1/4W

10	5%	1/4W
510K	5%	1/4W
33K	5%	1/4W
270K	5%	1/4W
82K	5%	1/4W

10K	5%	1/4W
560	5%	1/4W
100K	5%	1/4W
3.6K	1%	1/6W
22K	5%	1/4W

100K	5%	1/4W
18K	5%	1/4W
18K	5%	1/4W
1M	5%	1/4W
100K	1%	1/6W

100K	1%	1/6W
10K	5%	1/4W
100K	5%	1/4W
10K	5%	1/4W
1K	5%	1/4W

22K	5%	1/4W
1M	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W

10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W

10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W
10K	5%	1/4W

470K	5%	1/4W
10K	5%	1/4W
4.7K	5%	1/4W
2.7K	5%	1/4W
100	5%	1/4W

4.7K	5%	1/4W
10	5%	1/4W
22K	5%	1/4W
10K	5%	1/4W
1K	5%	1/4W

27K	5%	1/4W
4.7K	5%	1/4W

RES, ADJ, CARBON 22K (E-F BALANCE)
RES, ADJ, CARBON 22K (TRACKING GAIN)
RES, ADJ, CARBON 22K (FOCUS GAIN)

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description
RV104	1-228-993-00	RES, ADJ, CARBON 4.7K (FOCUS BIAS)
RV201	1-228-990-00	RES, ADJ, METAL GLAZE 1K (RF PLL FREQUENCY)
S101	1-571-274-11	SWITCH, LEAF (LIMIT IN)
S251	1-571-300-11	SWITCH, ROTARY (IN/OUT)
S801	1-554-303-21	SWITCH, KEY BOARD (1)
S802	1-554-303-21	SWITCH, KEY BOARD (2)
S803	1-554-303-21	SWITCH, KEY BOARD (3)
S804	1-554-303-21	SWITCH, KEY BOARD (4)
S805	1-554-303-21	SWITCH, KEY BOARD (5)
S806	1-554-303-21	SWITCH, KEY BOARD (6)
S807	1-554-303-21	SWITCH, KEY BOARD (7)
S808	1-554-303-21	SWITCH, KEY BOARD (8)
S809	1-554-303-21	SWITCH, KEY BOARD (9)
S810	1-554-303-21	SWITCH, KEY BOARD (10)
S811	1-554-303-21	SWITCH, KEY BOARD (11)
S812	1-554-303-21	SWITCH, KEY BOARD (12)
S813	1-554-303-21	SWITCH, KEY BOARD (13)
S814	1-554-303-21	SWITCH, KEY BOARD (14)
S815	1-554-303-21	SWITCH, KEY BOARD (15)
S816	1-554-303-21	SWITCH, KEY BOARD (16)
S817	1-554-303-21	SWITCH, KEY BOARD (17)
S818	1-554-303-21	SWITCH, KEY BOARD (18)
S819	1-554-303-21	SWITCH, KEY BOARD (19)
S820	1-554-303-21	SWITCH, KEY BOARD (20)
S821	1-554-303-21	SWITCH, KEY BOARD (> 20)
S822	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S823	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S824	1-554-303-21	SWITCH, KEY BOARD (FILE RECALL)
S825	1-554-303-21	SWITCH, KEY BOARD (EDIT)
S826	1-554-303-21	SWITCH, KEY BOARD (■)
S827	1-554-303-21	SWITCH, KEY BOARD (▶)
S828	1-554-303-21	SWITCH, KEY BOARD (▲)

Ref.No	Part No.	Description
S829	1-554-303-21	SWITCH, KEY BOARD (C.INDEX)
S830	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)
S831	1-554-303-21	SWITCH, KEY BOARD (FILE)
S832	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S833	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S834	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S835	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S836	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S837	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)
S838	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S839	1-554-303-21	SWITCH, KEY BOARD (AUTO SPACE)
S840	1-554-303-21	SWITCH, KEY BOARD (TIME MEMO)
S841	1-554-303-21	SWITCH, KEY BOARD (■)
S842	1-554-303-21	SWITCH, KEY BOARD (ERASE)
S851	1-571-305-11	SWITCH, PUSH (1 KEY) (POWER)
T990	△ 1-449-558-11	TRANSFORMER, POWER
TB901	* 1-535-120-00	TERMINAL
TB990	* 1-535-140-00	BASE POST 22MM (10MM PITCH) 3P
TB991	1-535-416-00	TERMINAL
TB992	1-535-416-00	TERMINAL
X301	1-577-157-11	VIBRATOR, CERAMIC (8MHz)
X361	1-567-926-11	VIBRATOR, CRYSTAL (16.9344MHz)
X801	1-567-192-11	OSCILLATOR, CERAMIC (4MHz)

**Note:** The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

# PS-V901

## SERVICE MANUAL

*AEP Model  
UK Model  
E Model*



### SPECIFICATIONS

#### Turntable

Platter	30 cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33 $\frac{1}{3}$ rpm/45 rpm switchable
Wow and flutter	0.08% (WRMS)
Signal-to-noise ratio	65 dB (DIN-B)
Automatic system	Return, reject, lead in.

#### Tonearm

Type	Statically
Pivot-to stylus length	200 mm (7 $\frac{7}{8}$ in.)
Overall arm length	236 mm (9 $\frac{1}{4}$ in.)



#### Cartridge

Type	Moving magnet type
Frequency response	20 Hz - 20kHz
Stylus	ND-155G

#### General

Dimensions	355 × 95 × 335 mm (w/h/d) (14 × 3 $\frac{3}{4}$ × 13 $\frac{1}{4}$ inches) Approx. 2.3 kg (5 lb 2 oz)
Weight	
Power requirements	AEP model: 220 V AC, 50/60 Hz UK model: 240 V AC, 50/60 Hz E model: 110-120 V, 220-240 V adjustable, 50/60 Hz
Power consumption	3 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus ND-155G Stat spray XP-C10 Cleaner XP-C1, XP-C2

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

STEREO TURNTABLE SYSTEM  
**SONY**®

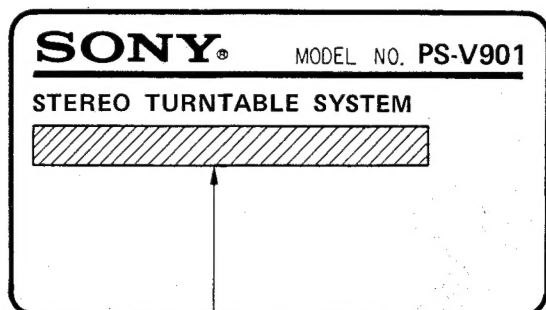




## SECTION 1 GENERAL

### MODEL IDENTIFICATION

— Specification Label —

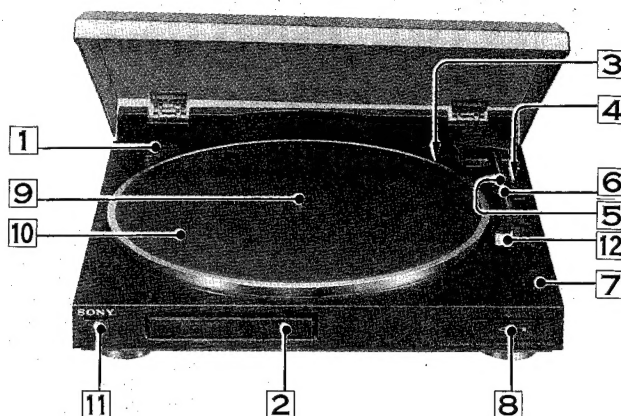


AEP model: AC 220 V 50/60 Hz 3 W

UK model: AC 240 V 50/60 Hz 3 W

E model: AC 110–120/220–240 V 50/60 Hz 3 W

### LOCATION AND FUNCTION OF CONTROLS



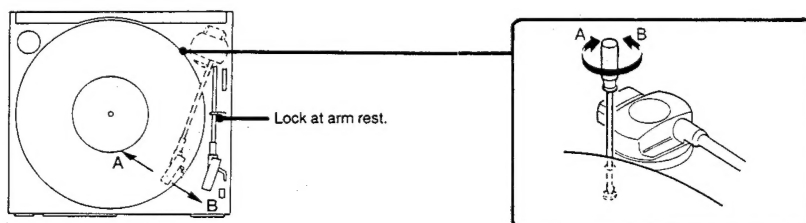
- 1 45-rpm Adaptor
- 2 SPEED selector
- 3 Drop point adjustment hole
- 4 Cueing lever (▼/▼)
- 5 Tonearm
- 6 Armrest
- 7 SIZE SELECTOR
- 8 ◀ (start)/▶ (stop) button
- 9 Center spindle
- 10 Rubber mat
- 11 POWER button
- 12 Cartridge

### Drop-point Adjustment

The tonearm drop-point during auto play has been factory-adjusted. If necessary, readjust it as follows.

To move the drop-point toward A, turn the adjustment screw clockwise with a screwdriver.

To move the drop-point toward B, turn the adjustment screw counterclockwise with a screwdriver.



## SECTION 2 ADJUSTMENT

### Speed Adjustment

**Note:** Be sure to perform 45-rpm adjustment before 45-rpm.

1. Put a stroboscope board on the mat.

2. Set the SPEED switch to 45.

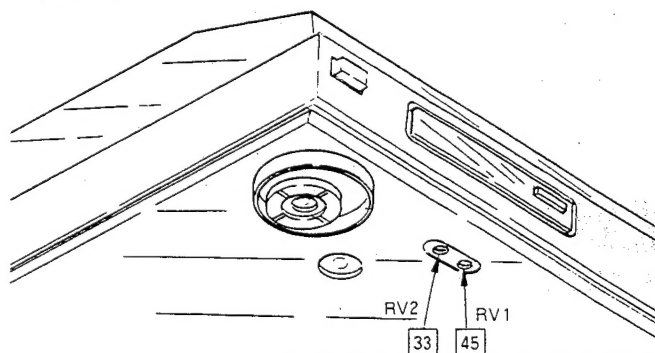
Depress the lifter knob to make a lift-up mode and move the arm above to the outer most groove of a record.

Adjust RV1 so that the striped pattern of stroboscope board is stationary.

3. Set the SPEED switch to 33.

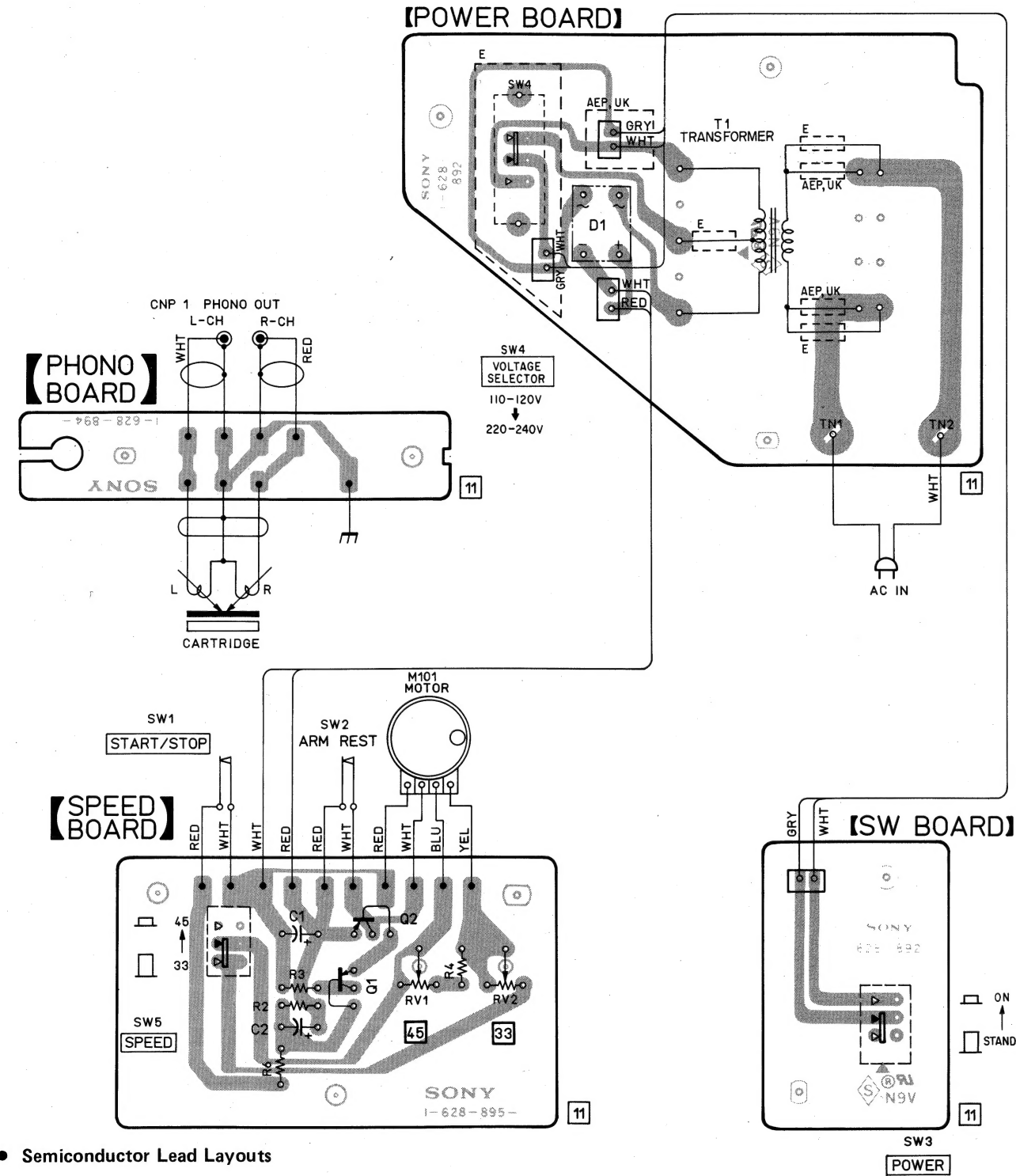
Adjust RV2 in the same way.

### Adjustment Location:

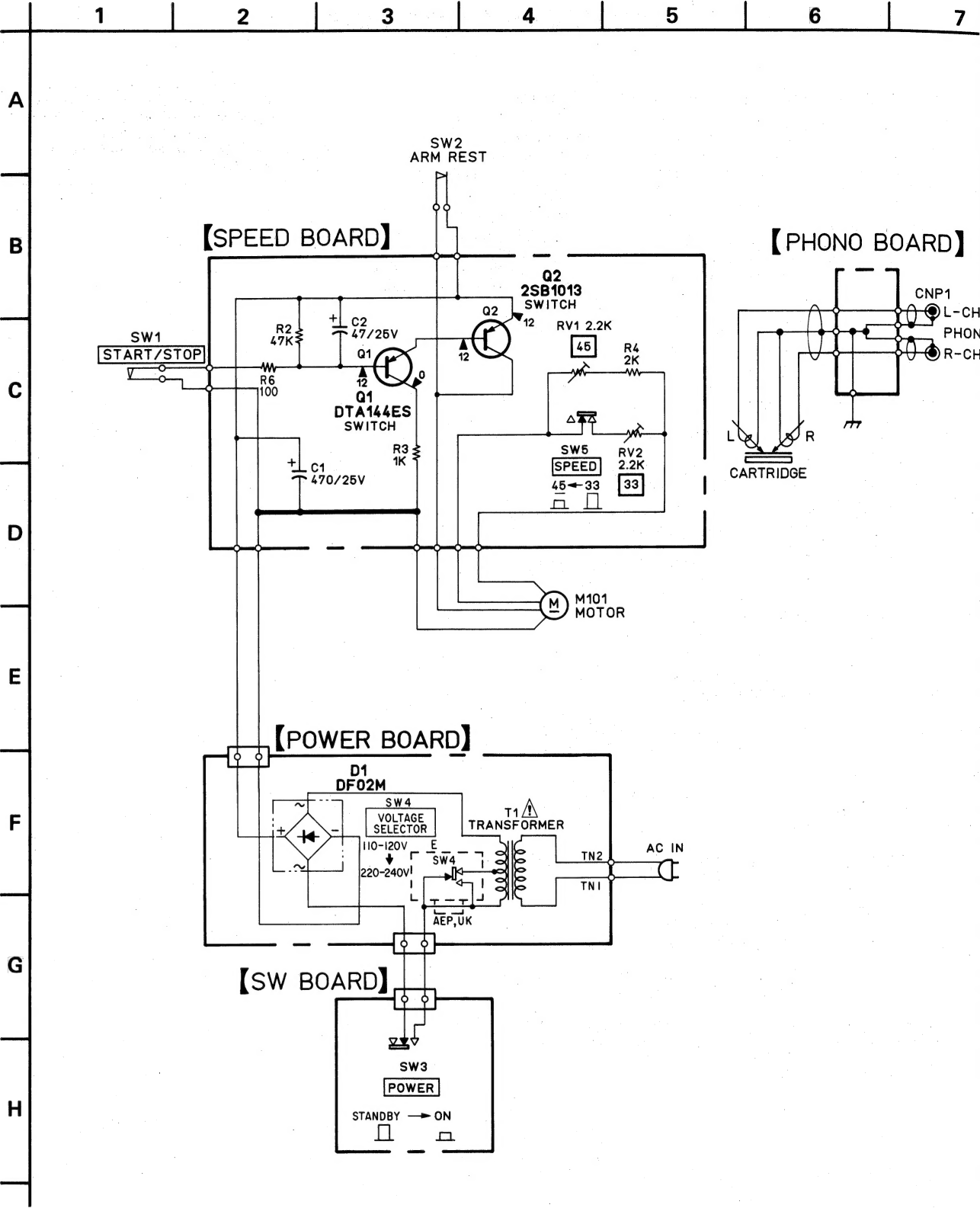


SECTION 3  
DIAGRAMS

3-1. PRINTED WIRING BOARDS



3-2. SCHEMATIC DIAGRAMS



Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.



- $\square$ : adjustment for repair.

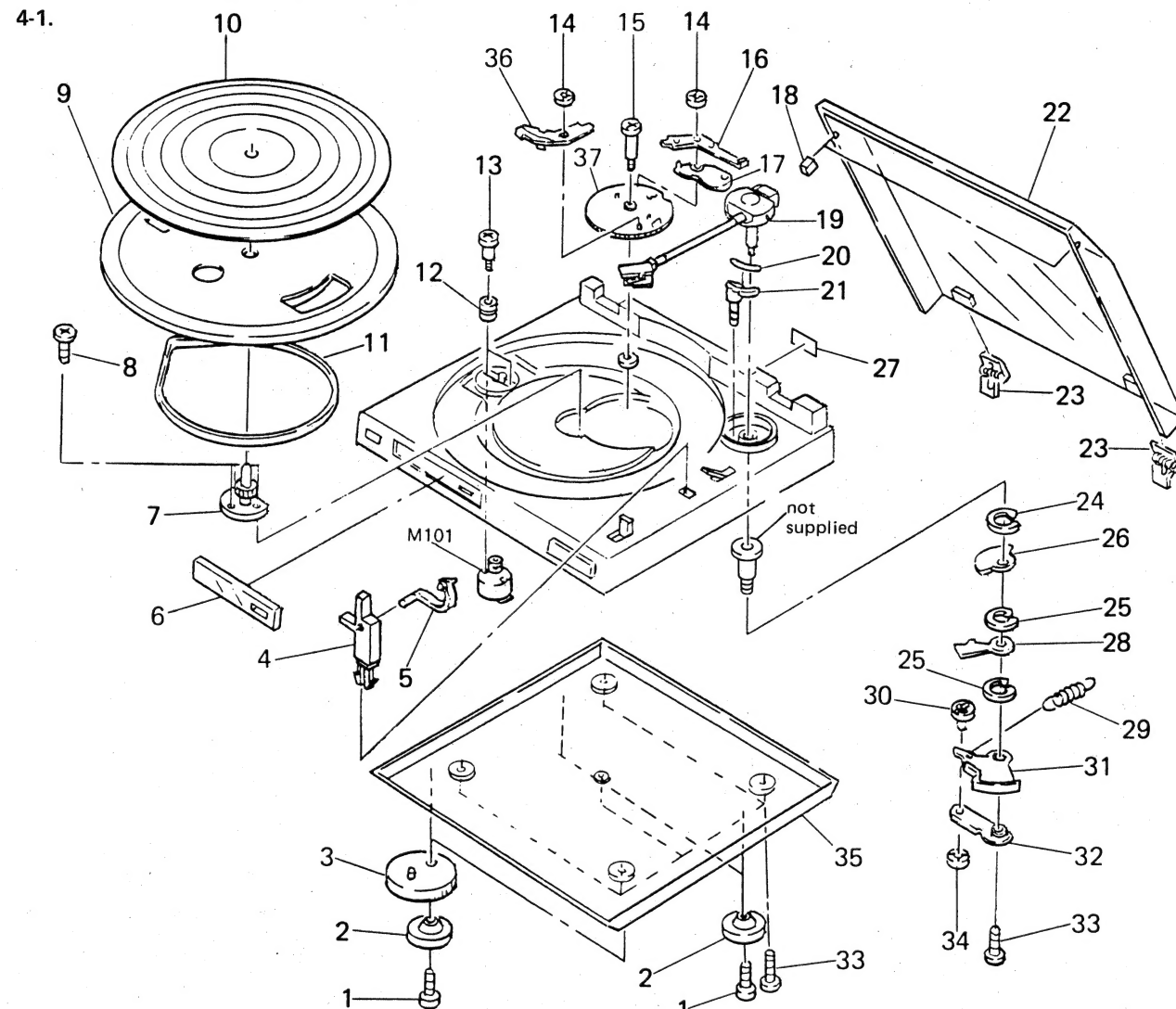
# SECTION 4 EXPLODED VIEWS

## NOTE:

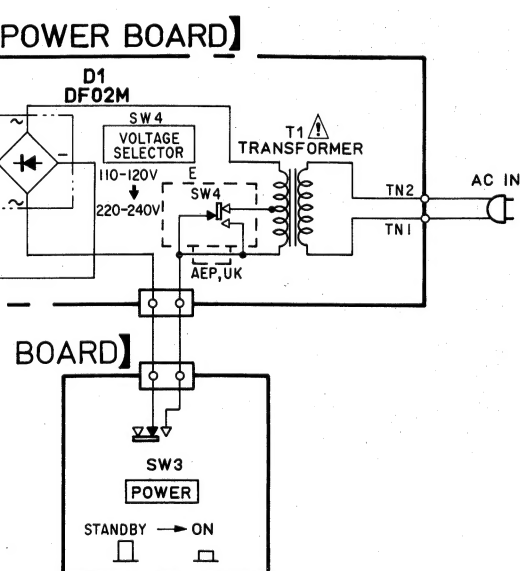
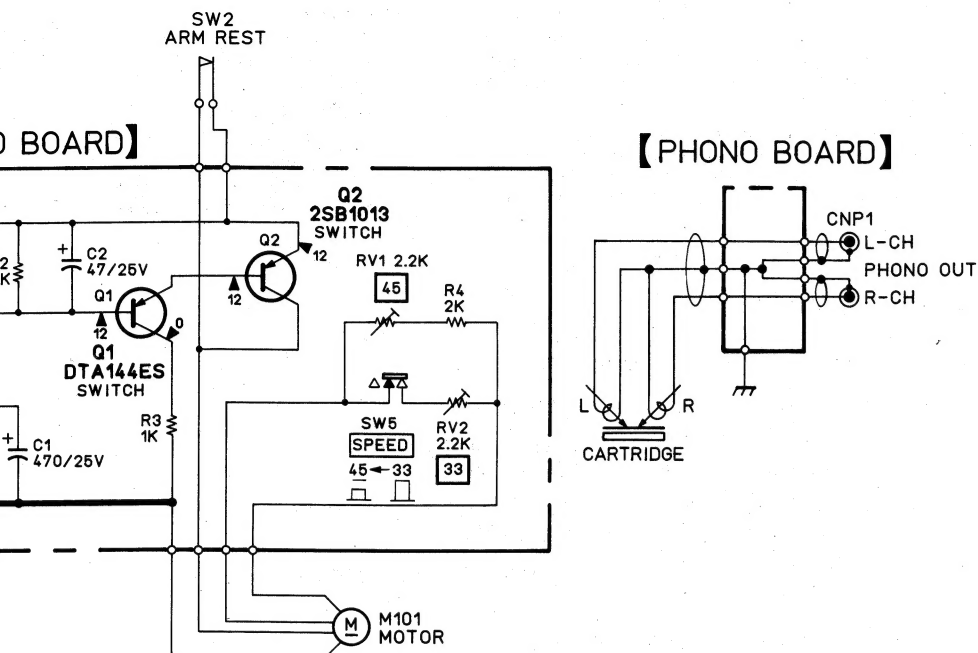
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color


The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-685-536-19	SCREW (+PTW) (2.6X12)		23	4-913-591-01	HINGE	
2	4-913-588-01	INSULATOR		24	7-624-133-74	STOP RING 12, TYPE-CE	
3	4-928-232-01	COVER (INSULATOR)		25	7-624-133-64	STOP RING 11, TYPE-CE	
4	4-928-213-01	REST, ARM		26	X-4913-528-1	LEVER (INDEX G) ASSY	
5	4-913-578-01	HOOK, REST		27	*4-928-250-01	(AEP).....LABEL, MODEL NUMBER (AEP1)	
6	4-928-233-01	WINDOW (SPEED)			*4-928-251-01	(UK).....LABEL, MODEL NUMBER (UK)	
7	A-4633-116-A	BEARING ASSY			*4-928-252-01	(E,Saudi Arabia)....LABEL, MODEL NUMBER(E)	
8	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S		28	*X-4913-522-1	LEVER (INDEX F) ASSY	
9	4-928-230-01	TURNABLE		29	3-548-124-00	SPRING, TENSION	
10	4-928-226-01	SHEET (T,T)		30	4-928-208-01	CAM (DP)	
11	4-880-655-01	BELT		31	4-928-220-01	LEVER (ARM DRIVING A)	
12	4-909-061-11	CUSHION, MOTOR		32	4-928-221-01	LEVER (ARM DRIVING B)	
13	4-909-062-01	SCREW, MOTOR		33	7-685-647-79	SCREW, TAPPING	
14	7-624-190-81	STOP RING 2, TYPE-CS		34	7-624-190-61	STOP RING 2.4, TYPE-CS	
15	4-913-595-01	SCREW (STEP 2.6 TP)		35	*4-928-228-01	PLATE, BOTTOM	
16	4-874-254-00	CLUTCH (S)		36	4-874-279-00	CLUTCH (L)	
17	4-874-232-00	CLUTCH (R)		37	4-880-524-00	GEAR (S), DRIVE	
18	4-913-592-01	CUSHION (DUST)		M101	A-4604-213-A	(UK).....MOTOR ASSY	
19	A-4604-166-A	ARM ASSY		M101	A-4608-363-A	(AEP,E,Saudi Arabia)....MOTOR ASSY	
20	*4-928-258-01	SHEET (UP AND DOWN) (B)					
21	*4-913-581-01	HOLDER (UP AND DOWN)					
22	4-928-229-01	COVER, DUST					



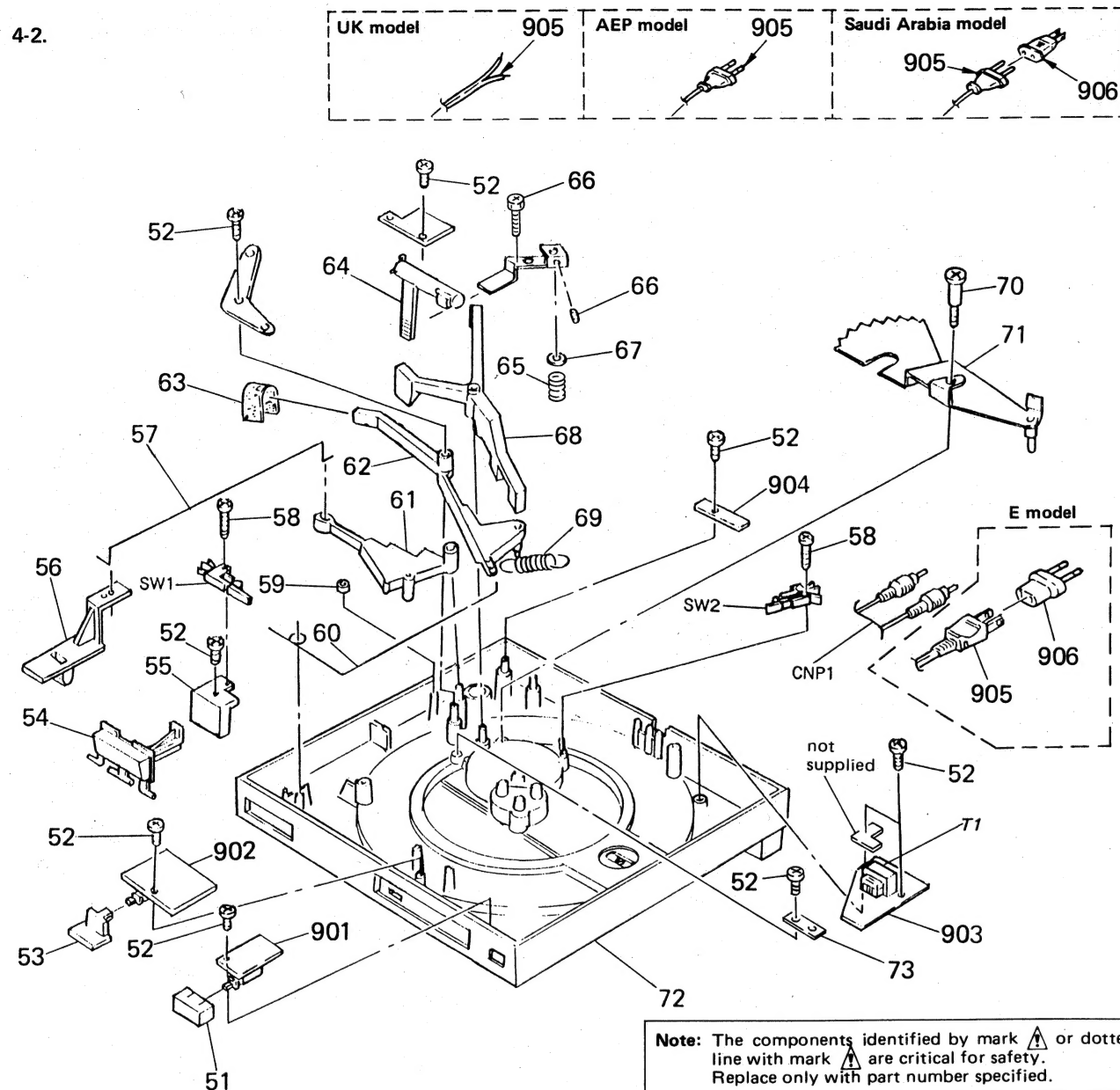
Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

-  : adjustment for repair.

## SECTION 5

### ELECTRICAL PARTS LIST

4-2.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	4-922-903-01	BUTTON (PW)		70	4-913-596-01	SCREW (STEP 3 TP)	
52	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S		71	*X-4913-523-1	LEVER (MAIN) ASSY	
53	3-332-457-01	BUTTON (1/3), DUBBING		72	4-928-234-11	CABINET (PS-B)	
54	4-928-217-01	BUTTON (START)		73	*4-928-245-01	HOLDER (RESET)	
55	*4-913-583-01	HOLDER (START)		901	*1-628-892-11	PC BOARD, POWER SW	
56	4-913-579-01	KNOB (SIZE)		902	*1-628-895-11	PC BOARD, SPEED CONTROL	
57	*4-913-589-01	JOINT (SIZE)		903	*1-628-893-11	PC BOARD, POWER	
58	7-621-255-75	SCREW +P 2X12 TYPE2 NON-SLIT		904	*1-628-894-11	PC BOARD, PHONO	
59	*4-903-453-01	CUSHION (C)		905	▲.1-551-188-XX (E).....CORD, POWER		
60	*4-913-593-01	JOINT (START)			▲.1-555-795-00 (AEP,Saudi Arabia)		
61	*4-928-215-01	LEVER (SIZE)			...CORD, POWER, EULO PLUG		
62	*4-913-580-01	LEVER (RESET)			▲.1-556-562-00 (UK).....CORD, POWER		
63	*4-913-597-01	SHEET (BRAKE)		906	▲.1-506-401-00 (Saudi Arabia)....ADAPTOR, CONVERSION		
64	4-928-214-01	LEVER (LIFTER)			▲.1-526-565-00 (E).....AC PLUG ADAPTOR		
65	4-928-240-01	SPRING (LIFTER B), COMPRESSION		CNP1	1-551-294-00	CORD (WITH PLUG)	
66	7-683-413-05	SCREW (HEXAGON HOLE) (2.6X8)		SW1	1-570-072-11	SWITCH (START/STOP)	
67	4-928-244-01	WASHER		SW2	1-570-072-11	SWITCH (ARM RESET)	
68	*4-928-216-01	LEVER (CLUTCH)		SW3	1-570-879-11	SWITCH, PUSH (1 KEY)(POWER)	
69	4-928-235-01	SPRING (RESET), TENSION		SW4	▲.1-570-974-11 (E)...SWITCH, SLIDE (VOLTAGE SELECTOR)		
				SW5	1-570-879-11	SWITCH, PUSH (1 KEY)(SPEED)	
				T1	▲.1-449-756-11 (AEP,UK).....TRANSFORMER, POWER		
				T1	▲.1-449-757-11 (E,Saudi Arabia)...TRANSFORMER, POWER		
				TN1	*1-535-688-11	TERMINAL	
				TN2	*1-535-688-11	TERMINAL	

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**In each case, U:  $\mu$ , for example:UA....  $\mu$ A..., UPA....  $\mu$ PA...,UPC....  $\mu$ PC, UPD....  $\mu$ PD...

The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
901	*1-628-892-11	PC BOARD, POWER SW
902	*1-628-895-11	PC BOARD, SPEED CONTROL
903	*1-628-893-11	PC BOARD, POWER
904	*1-628-894-11	PC BOARD, PHONO
905	▲.1-551-188-XX (E).....CORD, POWER	
	▲.1-555-795-00 (AEP,Saudi Arabia)	
	...CORD, POWER, EULO PLUG	
	▲.1-556-562-00 (UK).....CORD, POWER	
906	▲.1-506-401-00 (Saudi Arabia)....ADAPTOR, CONVERSION	
	▲.1-526-565-00 (E).....AC PLUG ADAPTOR	
C1	1-124-480-11	ELECT 470MF 20% 25V
C2	1-124-477-11	ELECT 47MF 20% 25V
CNP1	1-551-294-00	CORD (WITH PLUG)
D1	8-719-937-50	DIODE DF02M
Q1	8-729-900-65	TRANSISTOR DTA144ES
Q2	8-729-116-57	TRANSISTOR 2SB1013
M101	A-4604-213-A (UK).....MOTOR ASSY	
M101	A-4608-363-A (AEP,E,Saudi Arabia)...MOTOR ASSY	
R2	1-249-437-11	CARBON 47K 5% 1/4W
R3	1-249-417-11	CARBON 1K 5% 1/4W
R4	1-247-838-00	CARBON 2K 5% 1/4W
R6	1-249-405-11	CARBON 100 5% 1/4W
RV1	1-228-991-00	RES, ADJ, CARBON 2.2K
RV2	1-228-991-00	RES, ADJ, CARBON 2.2K
SW1	1-570-072-11	SWITCH (START/STOP)
SW2	1-570-072-11	SWITCH (ARM RESET)
SW3	1-570-879-11	SWITCH, PUSH (1 KEY)(POWER)
SW4	▲.1-570-974-11 (E)...SWITCH, SLIDE (VOLTAGE SELECTOR)	
SW5	1-570-879-11	SWITCH, PUSH (1 KEY)(SPEED)
T1	▲.1-449-756-11 (AEP,UK).....TRANSFORMER, POWER	
T1	▲.1-449-757-11 (E,Saudi Arabia)...TRANSFORMER, POWER	
TN1	*1-535-688-11	TERMINAL
TN2	*1-535-688-11	TERMINAL

**ACCESSORY & PACKING MATERIAL**

3-701-806-00	ADAPTOR, 45, (E)
3-750-420-11	MANUAL, INSTRUCTION
3-750-420-41	(AEP)...MANUAL, INSTRUCTION
*4-913-575-01	CUSHION (LEFT)
*4-913-576-01	CUSHION (RIGHT)
*4-928-257-01	INDIVIDUAL CARTON